Roland USERS GROUP

V4 n 1

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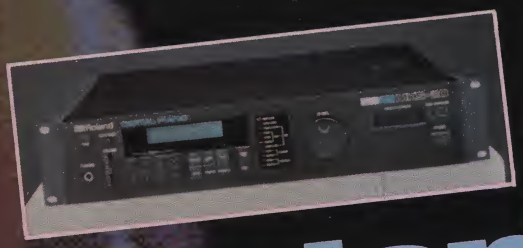
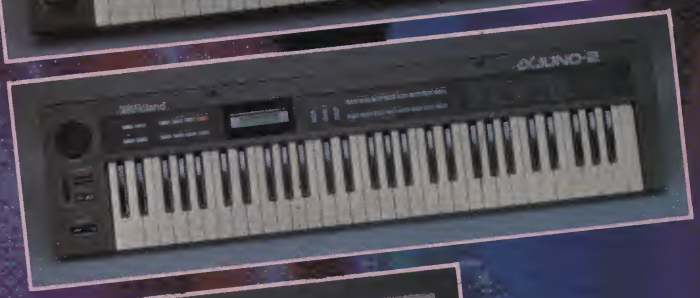
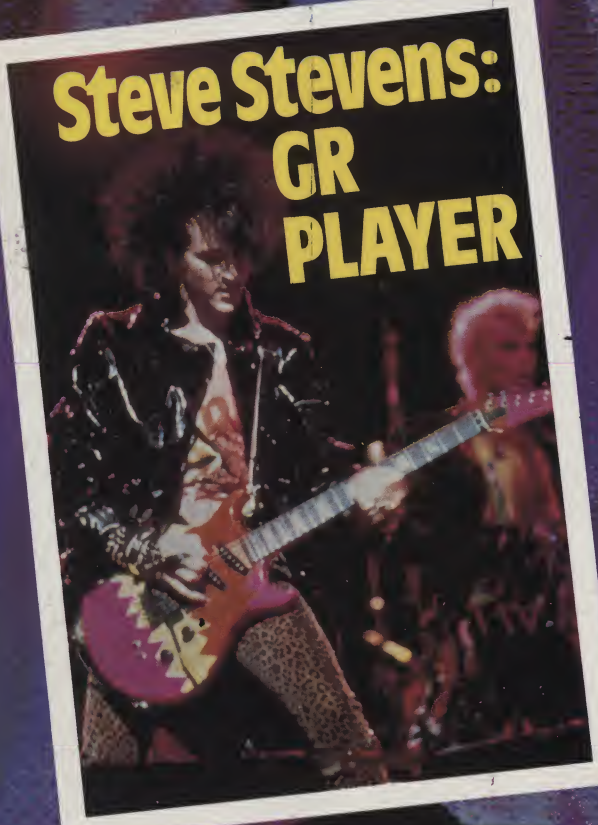
THE MAGAZINE FOR THE ELECTRONIC MUSICIAN



An Explosion of New Technologies



Steve Stevens: GR PLAYER



A ROLAND SPECIAL REPORT:
SYNTHESIZERS, COMPUTERS, and EDUCATION

RD-1000/MKS-20 DIGITAL PIANOS

RolandCorp US, 7200 Dominion Circle, Los Angeles, CA 90040, (213) 685-5141.

GRAND ILLUSION

Until now electronic attempts to duplicate, by sampling or synthesis, the grand piano's complex sound have always been disappointing. Not so with Roland's new proprietary digital technology—SA (Structured Adaptive) Sound Synthesis—which neither approximates nor simulates an acoustic piano, but actually recreates the sound. Note for note, nuance for nuance—replicating faithfully the harmonic characteristics and timbre variations across the entire keyboard while responding to playing dynamics with extraordinary accuracy and warmth. Roland's is indeed a grand illusion—but one born of the noblest intentions: to offer musicians a modern, practical and more affordable version of the revered grand piano. Yet Roland has accomplished more: the RD-1000 Digital Piano and the MKS-20 Digital Piano Module share the same polyphonic, 16 voice SA technology that offers eight different velocity sensitive sounds—two classic grand pianos, electric grand, harpsichord, clavinet, vibraphone, and two distinctive electric pianos. Each preset is modifiable by a simple twist of the ergonomically concieved Alpha-Dial—vary numerous parameters including digital parametric eq. settings, tuning, volume, tremolo and chorus rate settings, then store those changes into 56 internal memories or on an M-16C external cartridge. The RD-1000 is a stand alone, velocity sensitive keyboard instrument, with 88 wooden keys and a balanced weighted action making it a powerful MIDI controller for other instruments as well. The compact rack-mountable MKS-20 Digital Piano Module, designed to be an add-on unit, provides the same keyboard voices under the control of any MIDI controller—keyboard synthesizer, sequencer, Roland's Pad-8 Octapad, even a guitar synthesizer. Roland invites you to audition the remarkable RD-1000 and MKS-20 because with any fine instrument, hearing is believing. But even beyond the hearing and feeling we know you'll be amazed by the fact that these instruments cost quite a few grand less than you would expect. And that's the best part of the illusion.

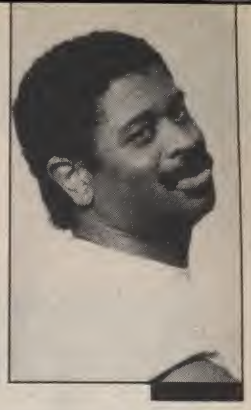
Roland

Roland

Reverb, truly realized. Consider this: assemble every conceivable parameter of natural and plate reverberation, incorporate the possibilities of non-linear (gated) reverberation, augment these with a parametric equalizer, use a 16-bit A/D/A converter and a 28-bit parallel-operation signal processor. Put all of that under computer control for one-button convenience, and complete the picture with MIDI control for (no button) convenience. Roland has not only considered these ideas, we have realized them, in the SRV-2000 MIDI Digital Reverb. Roland Corp. US, 7200 Dominion Circle, Los Angeles, CA 90040.

DIGITAL SIGNAL PROCESSING FROM ROLAND

THE ULTIMATE ACHIEVEMENT IN CONTROL ROLAND'S SRV-2000 DIGITAL REVERB



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An Exclusive Interview with Steve Stevens, Guitarist and Roland User

Emerging from Billy Idol's band as a potent musical force in his own right, Stevens talks candidly about how he uses Roland's GR System to create his distinctive sound, and why you can't rely on licks alone to become a great guitarist.

▶ 25

A Roland Special Report: Synthesizers, Computers, and Education
by Robert Carr

Today's new music technology is changing the course of music education in America. In this special report, we'll focus on the nature of these changes and the technologies being employed. By visiting teachers and students at various grade levels throughout the country, you'll discover how Roland products are being used to enrich existing music programs by rekindling the enthusiasm for musical creativity.

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Making Waves with MIDI: Composer and Teacher George Shaw
by Clay Lord

From playing trumpet for Marvin Gaye, to developing a real-world approach to music education, to the recent release of his new album, George Shaw is a latter-day renaissance man whose ever-growing Roland MIDI system is the focal point of his home-studio.

▶ **Letters** ■ Readers share their thoughts on the *Roland Users Group* magazine, how Roland's GR system helped a couple tie the knot, and what to do about water-logged synthesizers. 2

▶ **Random Noise** ■ All the noise that's fit to print on who's who and what's what throughout the world of Roland users. 4

▶ **BOSS Hardware** ■ More new pedals and additions to the Micro Studio Series plus, to commemorate the manufacture of the three millonth BOSS pedal, we're saying "Thanks to the World" with a special gift. 6

▶ **Roland Hardware** ■ Make way for New Technology from Roland: Digital Pianos that sound unbelievably acoustic, MIDI synths with exciting new features, a powerful sequencer with built-in disk drive, a compact new drum machine, and more! 9

▶ **Roland Software** ■ Take a closer look at Roland's MUSICOM series of music education software with an overview of the Rapid Piano course, plus check out the features of MUSE, MPS, and SJE–compositional software to suit every need. 16

Roland DG ■ Computer Aided Design and Manufacture is at the forefront of today's industrial technology, and Roland is there too with CAMM-3, a unique modelling device that can turn your plans into prototypes. 20

MIDIFAX ■ Freff takes a look at MIDI and the computer connection, outlining its advantages for musicians, such as sequencing software, instrument voice editing and library software, music notation and printing software, and having it all at the same time! 37

Rhythm Tracks ■ Jim Whitmore talks about the changing attitudes in drummers with respect to MIDI music technology, and shows how Roland's Octapad can open a whole world of synthesis and sequencing for percussionists. 40

Understanding Technology ■ As a result of an ongoing commitment to research and development of new technologies, Roland's new Digital Pianos sound unbelievably realistic. Here's a discussion of what makes that possible: Structured/Adaptive Synthesis. 42

Service ■ Here are the answers to your technical questions on Roland products, as compiled by our product specialists and electronics experts in the Roland Service Department. 44

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One Man's Opinion

Your Roland Users Group magazine is the most boring publication I have ever read. It's obvious that it's based solely on propaganda aimed to sell your products. You buy a few high-dollar endorsements and print letters of ecstatic Roland users. Why are you wasting my time with this junk?

The purpose of this letter is to let you know that most of us out here in the real world base our decisions on what we hear, not on what we read in a cheap company circular. Most of what I've read in your magazine has insulted my intelligence, and your unsubtle motives of marketing far outweigh any credibility it has as a publication to serve the electronic musician. Stop sending it to me, would you?

David Kowaleski,
Des Moines, IA

We appreciate hearing constructive criticism from all readers about what's valuable and what's not in the Users Group *magazine. Since Roland has no endorsement program, we can only assume the many letters of praise sent to us are authentic. It is our hope that the* Users Group *magazine will encourage people to take a closer look at Roland products in their local music stores and, indeed, base their purchasing decisions on what they hear. Most readers say they find our publication useful and interesting. If anyone does not wish to receive the magazine, merely send us the address sticker off your last copy and we will discontinue your subscription.*

Another Man's Opinion

I receive two copies of each issue of the Roland Users Group magazine and I love it! I share the extra copy with my friends and fellow musicians. If you must cancel the extra copy, okay, but then I refuse to let anyone touch my only issue. Keep issues coming or I will surely fall apart! Here's a picture of me with my new TR-707 alongside my old CR-78. (Somehow I just can't part with the "Old Black Box.")

Frank Boyd,
Santa Monica, CA

Super Symphony

Here is a picture taken at the final rehearsal for a performance of "Scherzo," written by conductor Karl Rucht for synthesizer and large orchestra. For my performance with the Arlington Symphony Orchestra, I used my MKB-1000 controller, the MKS-80 Super Jupiter module, and two Roland Cube keyboard amplifiers. The concert was recorded, and the metallic, poly-synth texture I used sounded great solo, as well as blending very well with the string and brass sections. I also used a crystalline bell-like timbre in the piece. I'm very pleased with the flexibility and reliability of Roland gear. I'm hoping to utilize it in a forthcoming multimedia project.

Brennan Roy,
Alexandria, VA

Surviving a Disaster

Recently I returned with the members of my band, X-DREAMS, from a much deserved vacation. We met at our basement rehearsal space in Boston to load up the van to play a gig in Maine. Little did we know that during our absence the Boston area was hit by a tremendous rain storm of monsoon proportions. One main street was under ten feet of water and had to be closed! We did not realize the personal effect the storm would have on us until we unlocked our rehearsal space door to find a scene of complete devastation. Several inches of water were still on the floor, and our equipment was floating around in it!

The high water line was visible on some amps at about a foot deep. My beloved Roland JX-3P, in a cheap home-made case, was floating near the doorway. When we lifted it up, water poured from the sides, and I burst into tears. Everything had been soaked, but my synthesizer received the worst of it, I thought. I took it out of the case, and the synth was dripping with water, which was also oozing out of the sides and switches on front. I dried it off the best I could, then I took it home to try the hair dryer method. I could see a white residue of salt or sediment all over the inner components, circuit boards, and wires. I hoped that the thirty-two unique and distinctive sounds I had programmed would still be in memory. Alas, I had neglected to save them on a back-up tape. Unfortunately, after the unit dried, I turned it on and those sounds had vanished into the ozone–but the factory presets still worked! The JX-3P still worked after being submerged in over ten inches of water! Pretty amazing!

I took the synth for a thorough cleaning to E. U. Wurlitzer in Boston where I had purchased it, and then began the laborious process of reprogramming my sounds. My amp, a Roland Jazz Chorus 120, also suffered water damage, yet the amp worked immediately with no ill effects other than a slight warping of the trim around the edges. I just wanted to let you know how wonderful Roland products are: They are hardy enough to survive a flood and still work!

Deborah F. Galiga,
Boston, MA

A Perfect Marriage

Last August my brother got married, and much of the music in the church service consisted of classical guitar duets played by me and my boyfriend. But when the bride appeared at the back of the church and the congregation stood for the traditional wedding march, they were treated to what may have been a musical first. The room was filled with the glorious sound of a large pipe organ, supplied by a line-in connection to the house P. A. system from my GR-700 Guitar Synthesizer. The factory patch was so effective, during a rehearsal the previous day I was interrupted by a nun who thought I was using the real pipe organ without permission! Those who hear me play the GR-700 in my rock band The Motion are no less amazed. Thanks for opening the world of synthesis to those of us with musical skills on a fretboard rather than a keyboard.

Tia Kirwin,
Springfield, MO

At Your Service

I am impressed with the service I have received in dealing with Roland. My interest was first sparked by the absolute versatility of your systems after seeing your two-page "World of MIDI" advertisment in a magazine. A few phone calls soon proved my suspicians to be true: The last word in medium-priced and highly versatile polyphonic keyboards is Roland. I've come to the definitive conclusion that Roland blows the competition away. Thank God there is a company making products to suit a wide range of needs, from beginner to professional.

Gordon, G. Miller III,
Richmond, VA

This duo of avid Roland users from Czechoslovakia sent in a picture to let you know that Roland Makes It Happen– even behind the Iron Curtain!

Roadside Delay

I'm writing to you today, the day after a concert by my band Insync, to say "Thanks!" As I was speeding down the road at about 50 m.p.h. to get to the concert, my Roland SDE-1000 Digital Delay went flying out the back of the car! (The hatchback was open to make room for some other equipment.) I immediately slammed the car to a stop, and ran to get the delay which was unscratched and damage-free! My Roland Juno-60 also performed great, so once again, "Thanks!"

Ben Decter,
Montclair, NJ

PLEASE NOTIFY US

If you are receiving multiple copies of the Roland Users Group magazine by sending us the address stickers off the extra copies.

THANK YOU!

Wise Shopper

The band I'm in does a lot of one-nighters, and we need equipment that will take the punishment of a hundred one-nighters a year. We've been using a Roland PA-150 eight channel powered mixer for the past four years, and it has never been in the shop. That says something for reliability. We've also been using BOSS Micro Monitors for the past four years (never been in the shop). We also have several BOSS effects pedals and a BOSS guitar tuner (never been in the shop). We have a Roland JX-3P synthesizer and Piano Plus keyboard, and besides the usual servicing they require, they will probably (you guessed it) never be in the shop. Talking to other musicians, they always brag about their big-name equipment, then turn around and admit how often they've had it in the shop. I guess it's their loss. Maybe they'll wise up someday. Roland is always one step ahead of all the rest. I'm hooked on Roland and proud of it.

J. Myers,
Bowling Green, OH

Address all correspondence to Roland Users Group Magazine, 7200 Dominion Circle, Los Angeles, CA 90040.

What, you may have been wondering, is the secret behind that huge synth sound on "Take On Me," the mega-hit by that

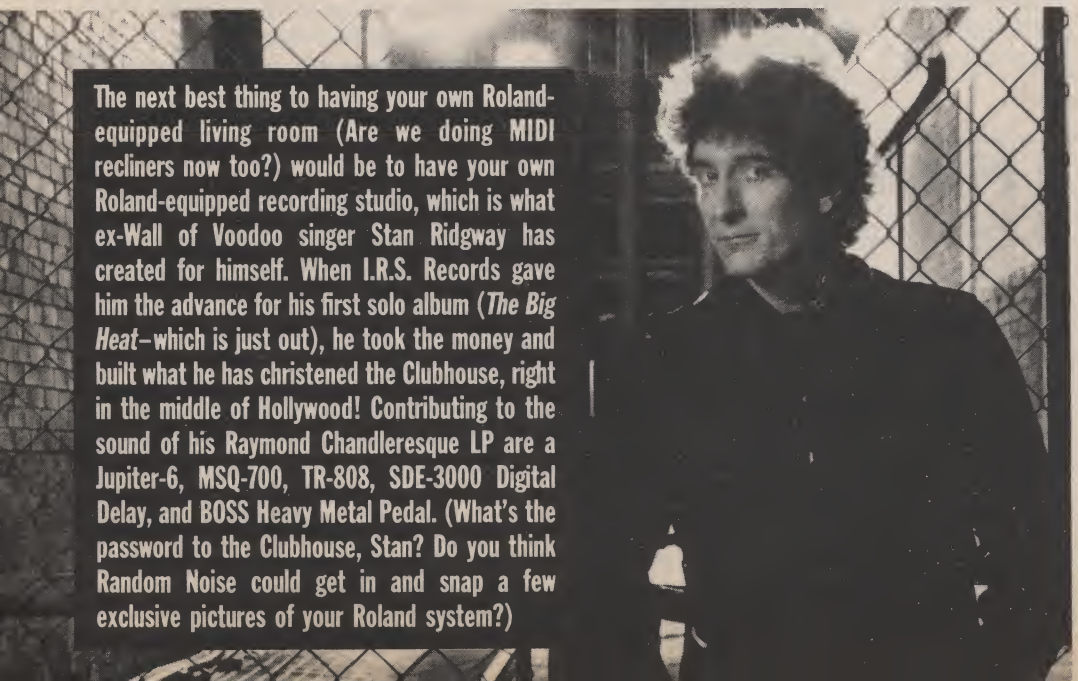
Robert Erdmann

pretty-boy Norwegian trio A-ha? A whole herd of modern musi-

cal instruments that's what, along with a reliable old Juno-60 right there in the front ranks! As you read this, those fave raves have isolated themselves in a London recording studio, hard at work on the follow-up to their Warner Bros. debut album, *Hunting High and Low*. You'll be able to catch them in your town early this sum-

mer at one of the forty-four stateside dates of their impending world tour.

If, in a fit of inspiration, you decide, "I'll do a MIDI album, at home, in my spare time, and it'll be a hit for sure!," just keep in mind that someone has already done it. Richard Souther's album *Heirborne*, which has sold nearly 60,000 copies in four months since its release, was recorded in his living room using an MSQ-700, along with an MSQ-100, MKS-30, JX-8P, Jupiter-8, MKB-1000, TR-808 Rhythm Composer, and SBX-80 Sync Box. On Sparrow Records' Meadowlark label and distributed by Capitol, *Heirborne* has earned raving comparisons by radio and press to the likes of George Winston and other Windham Hill artists. Check it out!



The next best thing to having your own Roland-equipped living room (Are we doing MIDI recliners now too?) would be to have your own Roland-equipped recording studio, which is what ex-Wall of Voodoo singer Stan Ridgway has created for himself. When I.R.S. Records gave him the advance for his first solo album (*The Big Heat*–which is just out), he took the money and built what he has christened the Clubhouse, right in the middle of Hollywood! Contributing to the sound of his Raymond Chandleresque LP are a Jupiter-6, MSQ-700, TR-808, SDE-3000 Digital Delay, and BOSS Heavy Metal Pedal. (What's the password to the Clubhouse, Stan? Do you think Random Noise could get in and snap a few exclusive pictures of your Roland system?)

Frank Delia

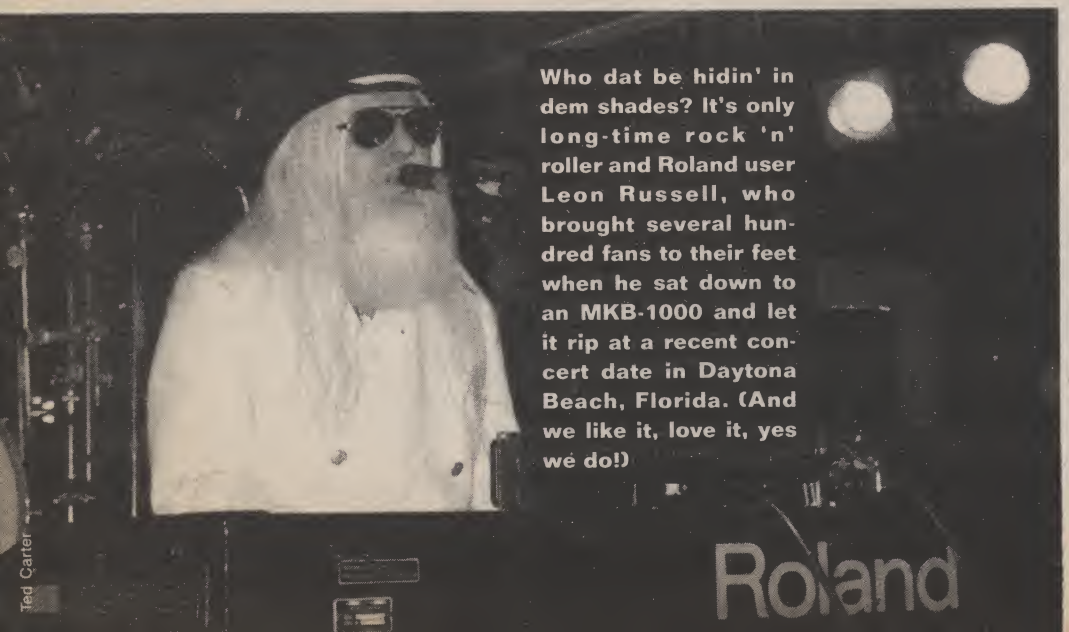
Roland's new MKS-20 DIgital Piano module has been embraced with open arms by a host of artists already using it on their current recording projects. The list covers the spectrum, from The Lost Boys and James Ingram to Ashford and Simpson, and Christopher Cross. Check out their upcoming releases—the MKS-20 has got to be heard to be believed!

Peter Soler

Why a duck? Why Thomas Dolby? Why Roland's Axis Remote Keyboard, GR-77B Bass Guitar Synthesizer, and new PD-10 and 20 Drum Pads? Only George Lucas, executive producer of the new film "Howard the Duck," knows for sure. Currently under production, the only information our Random Noise sleuths could get from the tight-lipped film crew is that Dolby is scoring the film (with a little help from his trusty Roland equipment) and putting in a cameo as the beatnik bartender! But who is Howard the Duck, you ask? All we know is that he's thirty-seven inches short and possesses a penchant for commenting on the human condition. The rest is all being kept a big mystery until the (undisclosed) release date. Please pass the ducksoup.

Roland user Herbie Hancock showed up in the Roland booth at the recent National Music Merchants trade show in Anaheim, California, to tickle the ivories on the new MKS-20 Digital Piano. (Is that Richard Souther in the background checking out the fancy finger-work?) We're sure glad Herbie found the time to say "Hi" and check out all our newest keyboards—this guy is busy! Besides hosting the PBS music education series "Rockschool," Hancock has been spending a lot of time in Paris (France, that is) scoring a film in which he's also acting, called "Round Midnight," directed by Bertrand Tavernier, and to be released by Warner Brothers this spring. Don't forget to check out Hancock's latest recording, titled *Village Life*, a beautifully intimate musical statement he created in conjunction with Foday Musa Suso, a kora player from Gambia. (And yes, you might just hear Roland's Digital Piano cropping up on an upcoming Hancock release. We'll keep you posted.)

Telecommunicate with other Roland users via the Long Beach/Roland (Unofficial) Bulletin Board: Dial 213-438-6783 from your computer.



Ted Carter

Who dat be hidin' in dem shades? It's only long-time rock 'n' roller and Roland user Leon Russell, who brought several hundred fans to their feet when he sat down to an MKB-1000 and let it rip at a recent concert date in Daytona Beach, Florida. (And we like it, love it, yes we do!)

The National Guitar Summer Workshop, held every year in the beautiful environs of South Kent, Connecticut (only a couple of hours from New York City), provides a unique opportunity to enhance your playing skills with master artists who come to share their knowledge on a full range of topics and styles. Once again this year, Roland product specialist Mark Altekruse will conduct special seminars and master workshops focusing on the GR-700 Guitar Synthesizer. Other presentations cover rock, jazz, bluegrass, and classical guitar as well as bass guitar, banjo, MIDI, recording techniques, songwriting/composition, and much more. For more information on these highly informative and inspirational one-week sessions, contact the NGSW at Box 222, Lakeside, CT 06758 or call 203-567-8529.

THANKS TO THE WORLD

With the sale this year of the three millionth BOSS compact effects pedal, Roland and BOSS wish to convey their gratitude to the many musicians who through their purchasing power have expressed support for the development of high-quality, affordable signal processing devices. Over the years, the wide range and untold number of musicians who have relyed on BOSS pedals to create a distinctive sound in music stands as an invaluable reward for all our efforts. But today's success story really began more than ten years ago, even before their was a BOSS.

Initially, BOSS effects devices and signal processors grew out of the original Roland effects pedals that were manufactured for approximately three years. The first effects pedal offered by Roland was called (don't laugh) the AF-100 BeeBaa Distortion and was released way back in August of 1972. Shortly after the BeeBaa's release, Roland began creating many other effects and signal processing devices geared for electric and electronic instruments. These devices, which were manufactured throughout the remainder of 1972 and 1973, included the AW-10 Wah-Wah, AD-50 Double Beat (combination wah and distortion) and the AG-5 Funny Cat which was one of the first envelope followers ever made. The other units in the Roland "A-Series" were made from 1974 to 1976. These products, many of which are still in use today, included phase shifters (AP-7/AP-5), a sustain device (AS-1), and other distortion devices such as the AF-60.

The research that went into the development of these products led to some improvements and perfections in the design of signal processors. The most dramatic perfection at that time was with "bucket-brigade" (BBD) circuits used for delay lines.

It was during the mid-1970s that BOSS was formed as a division of Roland, and soon after released its first product in June of 1976. This product used the new BBD circuit in a pedal which has become a classic: the CE-1 Stereo Chorus/Vibrato. The CE-1 was the first pedal of its kind to accept an incoming mono signal from an instrument (guitar/keyboard/bass) and convert the signal to a stereo chorus sound. The CE-1 found immediate acceptance and is still used by many musicians worldwide. With the outstanding success of the CE-1, BOSS began to create many devices that have today become standard effects and signal processors.

Unlike many of the other effects manufacturers who were around in the mid-1970s, BOSS spent a great deal of time and effort making advancements in pedal design to create devices that are more efficient and durable, as well as highly advanced in sound circuitry and processing. These research and development efforts allowed BOSS to create a line of compact pedals for electric and electronic instruments that are much quieter in operation, more flexible in processing, and more durable than any other pedals on the market.

These advancements were first implemented on the SP-1 Spectrum, the OD-1 Distortion, and the PH-1 Phaser which were the first in a long line of BOSS compact effects pedals. These advancements include silent on/off switching with a Field Effect Transistor switch (FET), separate circuit and battery compartments to eliminate the possible leakage of battery acid on the unit's components, non-skid rubber pads on the bottom of each device, optional AC adapter inlets, raised foot pedals to prevent breakage of knobs and/or switches, and also increased battery life through the use of low-drain circuits. Also, each BOSS compact pedal is designed to operate at very high signal-to-noise ratios, providing users with the quietest, most efficient sounds available. These high S/N ratio's can even be found on gain devices such as BOSS compressors, equalizers and distortion/overdrive units.

Since the initial release of the CE-1 Stereo Chorus/Vibrato and the first series of compact effects, BOSS has grown into the leading producer of many different types of signal processing devices, as well as mixers, instrument tuners, percussion units and rhythm machines, metronomes, powered and non-powered monitors, headphone amplifiers, standard volume/controller pedals, and the new Micro Studio Series of effects and signal processors which are especially well-suited for home multitrack recording in addition to live performance.

The musicians who use BOSS effects

and devices are as extensive and diverse as the BOSS product line itself. Devices such as the CE-2 and CE-3 Chorus pedals, BF-2 Flanger, HM-2 Heavy Metal, DD-2 Digital Delay, OC-2 Octaver, GE-7 Equalizer and others are permanent fixtures in the effect arsenals of world renown guitar, bass, and keyboard players.

As a token of our appreciation to all BOSS users, a commemorative "Thanks to the World" brass badge will be included with each BOSS compact effects pedal purchased this year. Through this gesture, we hope to demonstrate our continuing commitment to provide you with innovative, high quality, and affordable pedals and signal processing devices in the years to come.

—Mark Altekruse

RSD-10

The new BOSS RSD-10 is the first device to combine digital sampling with delay, making possible a completely new range of effects. The RSD-10 incorporates a revolutionary twelve-bit A/D/A converter and pitch control circuit that can receive monophonic audio signals and transmit the processed signal directly to the digital sampling circuitry. This new concept makes it possible for any electric or electronic instrument to act as the controlling instrument and play the sampled sound–not just trigger it!

The maximum sampling time of the RSD-10 is two seconds (2000mS) with a frequency response of over 7kHz. If a synthesizer is used as the controlling instrument, the RSD-10 will track nuances such as dynamics, pitch bend, LFO (vibrato), portamento, and attack and decay times from the synthesizer.

The Trigger input can be interfaced with the trigger outputs of drum machines to play the sampled sound and the pitch of the sample can be adjusted by the Playback Trim control. The Pad input can be interfaced to drum/percussion pads, such as Roland's PD-10 or PD-20, offering the ability to play the sampled sound with complete dynamics.

Other functions of the RSD-10 include an Overdub Trim that enables musicians to layer additional samples into memory, and the unit also includes a built-in digital delay with a variable delay time of 2mS to two seconds.

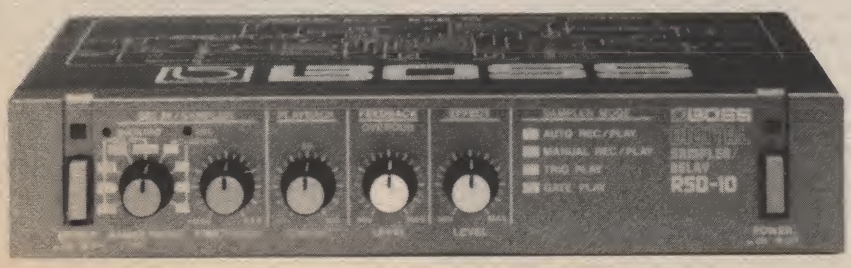
RPQ-10

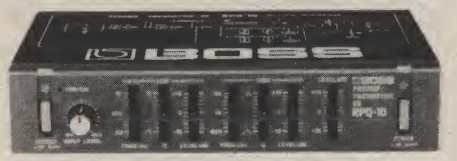
The newest addition to the BOSS Micro Studio Series of very affordable signal processors, the RPQ-10 Preamp/Parametric Equalizer features a variable input stage, two-band parametric equalization with variable Q, and individual and overall level controls. The input stage has an attenuator control for setting the input level of the connected instrument, microphone, or line-level signal. A Light Emitting Diode (LED) is provided for monitoring overload status and input stage. The effect On/Off switch can be controlled remotely with an optional DP-2 footswitch.

The equalizer section consists of Low and High sliders with frequency variation of 40Hz to 1kHz (Low) and 600Hz to 15kHz (High). The Low and High controls are also variable in their Q (0.7 to 7 each) and level (+/−15dB each). In the Level stage, an overall level slider is provided for attenuation or boost over a 15dB range.

The RPQ-10 can be used in a variety of applications where boosting, attenuating, and equalizing instrument or line-level signals is required. For example, the RPQ-10 can be used in various configurations with sound reinforcement mixers or in the effects loops of instrument amplifiers. This unit can also be used for boosting low-level signals from mixers or to enhance the performance of signal processing devices, making it an essential tool ▶

RSD-10: A UNIQUE CONCEPT IN SAMPLING AND DELAY TECHNOLOGY





RPQ-10: AN IDEAL PREAMP/ PARAMETRIC EQUALIZER FOR HOME RECORDING

for controlling preamp level and equalization in the home recording environment.

All input and output jacks are located on the back panel of the RPQ-10 and there are combinations of standard phone jacks and RCA pin jacks with varying input/output levels and impedances. The RPQ-10 has a frequency response of 15Hz to 40kHz making it ideal for a variety audio applications using microphones or direct instrument sources.

Like other products in the BOSS Micro Studio Series, the RPQ-10 takes up only half the space of most standard rack-mount devices, allowing two units to be mounted within a single space. Rack mounting is accomplished with a BOSS RAD-10 Rack Adapter.

HF-2

The BOSS HF-2 High Band Flanger is one of the newest additions to the BOSS line of compact effects and signal processing devices. Utilizing some of the circuitry and control functions of the popular BOSS BF-2 Flanger, the HF-2 goes one step further by providing flanging effects one octave higher than any other flanger on the market.

HF-2: ULTIMATE HIGH-BAND FLANGER

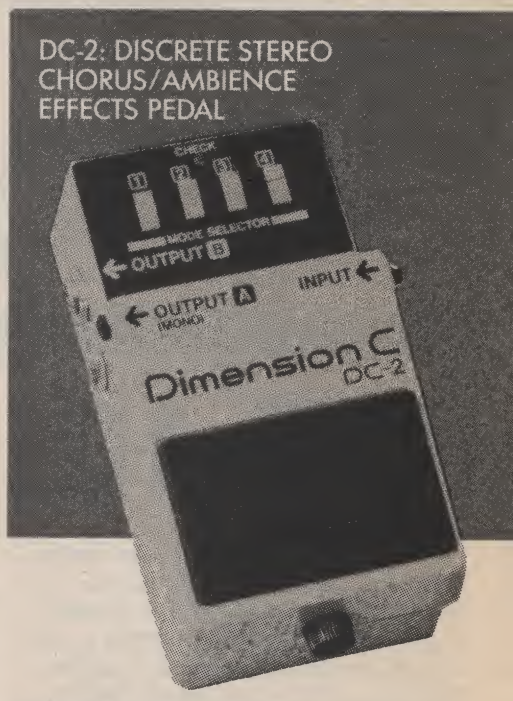
Because of its broad, high-band range, the HF-2 offers flanging colors that are very clear and bright without the distortion and "muddiness" in the low frequency range. The HF-2 is especially effective in the upper ranges of keyboard instruments and synthesizers, as well as in all types of electric guitars. The control functions of the HF-2 include Rate, Depth, Resonance, and Manual controls. The rate of the LFO (Rate control) is variable between 100mS to 16S, and the delay of the effect is adjustable from 0.5mS to 13mS. As with all BOSS pedals, on/off switching is accomplished with a silent FET (Field Effect Transistor) switch, and the pedal operates with a DC 9V battery or the optional PSA-120 Adaptor.

DC-2

The new BOSS DC-2 Dimension C incorporates much of the same advanced time-delay technology as the Roland SDD-320 Dimension D into a small, compact pedal that can be used for a wide range of applications with various instrument and signal sources. Like the SDD-320, the Dimension C has the capability of converting an incoming mono signal into a processed, discrete stereo chorus output.

The effect of the DC-2 is best described as a psycho-acoustic enhancement of all incoming signals, especially those in the middle and high frequency ranges. Any instrument-level and most line-level signals can be connected to the input of the DC-2 and the unit's stereo outputs can be interfaced to any existing setup of instrument amplifiers or stereo mixers. The DC-2 is an exciting effect that can be used to add a shimmering stereo-field to electronic instruments and synthesizers, or to vocal/instrument microphones. The DC-2 is also an effective tool for adding presence and life to instrumental or vocal tracks with home multitrack recording systems.

Four different stereo effects settings are available by selecting from the switches on the front of the DC-2. In ascending order, these switches increase the depth of the effect and, at switch number 4, will produce a lush, stereo chorus sound. Unlike other stereo enhancement devices where one output is the direct signal and the other output is assigned the effect, the DC-2 produces a discrete stereo field that creates a tremendous spatial sound when using a stereo mixer/amplifier/speaker configuration. As with other BOSS stereo devices, the DC-2 can also be used in a mono mode to produce standard chorus effects. This unit features very low noise operation and an input impedance of 1Mohm for effective use with most audio sources.



DC-2: DISCRETE STEREO CHORUS/AMBIENCE EFFECTS PEDAL

DIGITAL PIANOS COMBINE A NEW TECHNOLOGY AND MIDI FOR EXCEPTIONALLY REALISTIC SOUNDS

Exciting additions to Roland's ever-expanding line of MIDI keyboard instruments are the new, impressive sounding MIDI Digital Pianos which utilize the company's proprietary Structured/Adaptive Synthesis technology (S/A Synthesis), a new method of digital re-synthesis developed specifically for digital emulation of percussive, acoustic keyboards, making possible the creation of a wide range of complex sounds with full dynamics.

The **RD-1000 Digital Piano** provides an eighty-eight key, touch-sensitive, weighted-action, wooden keyboard that delivers exceptionally natural tone colors with complete dynamic sensitivity for an instrument that is a joy to play. The beautifully realistic sounds of the RD-1000 fully recreate those variations in timbre that are characteristic of different ranges on acoustic keyboard instruments. This sixteen-voice instrument offers eight preset sounds–three acoustic pianos, harpsichord, clavichord, vibraphone, and two electric piano–all of which have to be heard to be believed. Fifty-six programs of voice function data (such as level, equalization setting, chorus effects, tremolo effects, and so forth) can be entered with the easy-to-use alpha dial data entry control and twenty-character LCD (Liquid Crystal Display), then stored in the unit's internal memory or in an optional M-16C memory cartridge.

Eminently suited as a MIDI controller for any MIDI keyboard or sound module, the RD-1000 offers full MIDI implementation, including MIDI program change, volume control, key transposition, velocity information–all accessible through the unit's MIDI In, Out, and Thru jacks. There are stereo outputs (balanced and unbalanced) as well as a headphone jack, in addition to the power supply, a damper pedal, soft pedal, and external expression pedal that are included with the instrument.

The **MKS-20 Digital Piano Module** offers beautiful-sounding acoustic keyboard emulation through S/A Synthesis in a nineteen-inch rack-mount unit and can be accessed from any MIDI keyboard controller. This sixteen-voice polyphonic MIDI sound module provides eight highly realistic preset digital sounds: three acoustic pianos, harpsichord, clavichord, vibraphone, and two electric pianos. The MKS-20's functions (for chorus effects, tremolo, tuning, program change, write, edit, save, and load) are selected via switches and then adjusted with the easy-to-use alpha dial and twenty-character LCD (Liquid Crystal Display). Tone color data programs, including voice levels, digital parametric equalizer settings, and chorus and tremolo settings can be saved in the unit's internal memory or to the M-16C memory cartridge included with the unit. MIDI In and Thru jacks provide access to the MKS-20's full MIDI capability, and there are stereo outputs (balanced and unbalanced) as well as a headphone jack.

In Roland's Contemporary Keyboard line, the **HP-5500/5600 Digital Pianos** provide the same exceptionally realistic keyboard sounds as the RD-1000, with full dynamics and MIDI, in an attractive rosewood or polished walnut finish. ▶

and

JX-10

THE EXCITING JX-10 SYNTHESIZER: FEATURES, FEATURES, AND MORE FEATURES

Roland has earned a prominant position as a leading manufacturer of electronic musical instruments by developing reasonably priced systems that reflect a variety of powerful technologies. Contining to lead the way in 1986, Roland introduces the new JX-10 twelve-voice polyphonic, programmable synthesizer. Featuring the same sound architecture as the popular JX-8P, the JX-10 is a digital/analog hybrid unit that combines an on-board sequencer with three operating modes including Split, Dual (layered), and the normal twelve-voice polyphonic mode. In the split mode, the JX-10 becomes two separate and powerful synthesizers, each providing six polyphonic voices and separate MIDI channel sends and receives. The layered mode allows different sounds to be played simultaneously, in multi-timbral fashion. The polyphonic mode features twelve full polyphonic voices with a total of twenty-four DCOs (Digital Controlled Oscillators), twelve VCF/VCAs (Voltage Controlled Filters/Amplifiers), twelve LFOs (Low Frequency Oscillators), twenty-four ADSR (Attack/Decay/Sustain/Release) envelopes (two per voice), and Chorus. Complex waveforms can be constructed from a combination of sawtooth and pulse waveforms. Noise generation is also provided.

The seventy-six key, weighted-action keyboard features key velocity and aftertouch, making it the ideal controller for an entire MIDI system. As a MIDI master controller, the JX-10 offers many of the same features as other Roland Mother Keyboard Controllers, such as the ability to assign two separate MIDI channels with independant program changes, pitch bend, modulation, and portamento rates (off/on). Aftertouch on the JX-10 can be used to control Vibrato, Brilliance, or Volume. Key Velocity can control cross-fading of different sounds when in Dual (layered) mode, which allows keyboardists to use the expressive control of their playing technique to balance the two layered voices against each other.

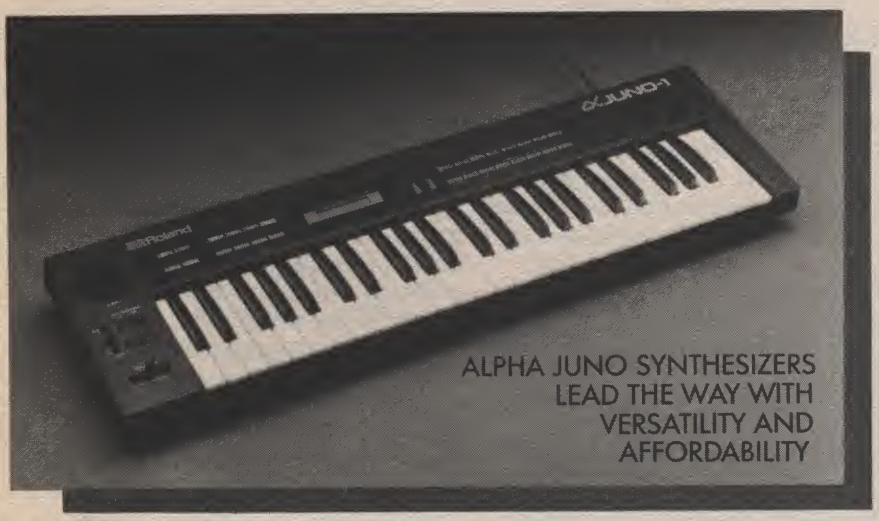
The JX-10 features the new alpha Dial data entry control for more accurate fine adjustment of programmable parameters. A highly legible thirty-two character FIP display of individual parameters facilitates the programming of Tones and Patches, and allows voicing modes to be identified at a glance. Optionally, a PG-800 Programmer can simplify programming by permitting access to all programmable parameters simultaneously via analog controls. With an optional M-64C RAM cartridge the unit's total memory capacity is 128 Patches plus 150 Tones.

An on-board, real-time sequencer can store up to 650 steps on the M-16C RAM cartridge included with the JX-10, or as many as 2,600 steps on an optional M-64C RAM cartridge. Operating modes include Loop Switch, Overdub and Punch In. Tempo is variable from 40 to 250 beats per minute. The Sequencer will run on its internal clock or from an external MIDI clock.

Performance Control Functions include Pitch Bend, Modulation, Unison Detune, Hold, Portamento, and Chase Play. The latter feature enables you to store musical phrases of up to thirty-two notes in memory temporarily, to be triggered after a preset delay that can range from ten milliseconds to three seconds, with programmable Level, Dynamics Time Follow, and Keyboard Mode (Upper, Lower, or Upper/Lower Alternation, permitting the delayed phrase to be played with a different patch). An optional EV-5 Foot Pedal may be used to control Volume, Portamento Time, or Sequence Rate. Optional DP-2 Pedal Switches can be used to implement Sequencer Play/Stop, Patch Shift or Portamento On/Off, and Hold. With full MIDI capability, the JX-10 comes with stereo output jacks for upper and lower keyboard and headphones.

NEW

ALPHA JUNO



ALPHA JUNO SYNTHESIZERS LEAD THE WAY WITH VERSATILITY AND AFFORDABILITY

Roland announces the addition of two new instruments to their successul line of Juno synthesizers: the alpha Juno-1 and alpha Juno-2. These compact units come equipped with many new features and a low Juno price. The new alpha Juno synthesizers offer a full range of sound possibilities for every kind of musical application.

The alpha Juno-2 digital/analog hybrid synthesizer offers six DCOs, six LFOs, six VCF/VCAs, a high pass filter, chorus, and six four-stage envelopes (with time and level controls for each stage), enabling the creation of complex envelopes and many interesting sounds. The unit provides level and rate controls for the Attack, Sustain, Decay, and Release functions, to allow sounds like plucked strings, xylophone, soaring lead sounds, jazz guitar, and synth drums to achieve a new realism unattainable on convntional, four-part ADSR envelopes. Complex waveforms are constructed from a combination of sawtooth, pulse, and sub-oscillator waves for the creation of many rich harmonic tones. Noise generation and pulse width modulation are also provided.

Sixty-four preset programs reside in the unit's ROM (Read Only Memory). An Edit mode can be used to create and store an additional sixty-four programs in on-board RAM (Random Access Memory). An optional RAM cartridge provides memory for sixty-four user-programmable tone colors, to supply you with access to a total of 192 different programs at one time. (In the alpha Juno-1, you have access to a total of 128 programs.)

Biometrics, the concept of changing more than one parameter at a time, has been implemented in the alpha Junos in such a way that even players with little or no understanding of synthesis can alter sounds easily and effectively to suit their taste using the al;pha dial. By simply selecting an edit control such as modulation, any movement of the alpha dial will control pulse width depth, vibrato depth, and chorus depth. Likewise, by selecting the rate edit, chorus rate, pulse width modulation rate and LFO rate will all be affected. The envelope edit will change all of the envelope parameters and the brilliance edit control will alter waveform, cutoff frequency, and the amounts of voltage sent to the keyboard and to the envelope generator. Combined with the sixteen-character Liquid Crystal Display (LCD), the alpha dial permits easy editing or modification of program data and performance control functions. ▶

technologies

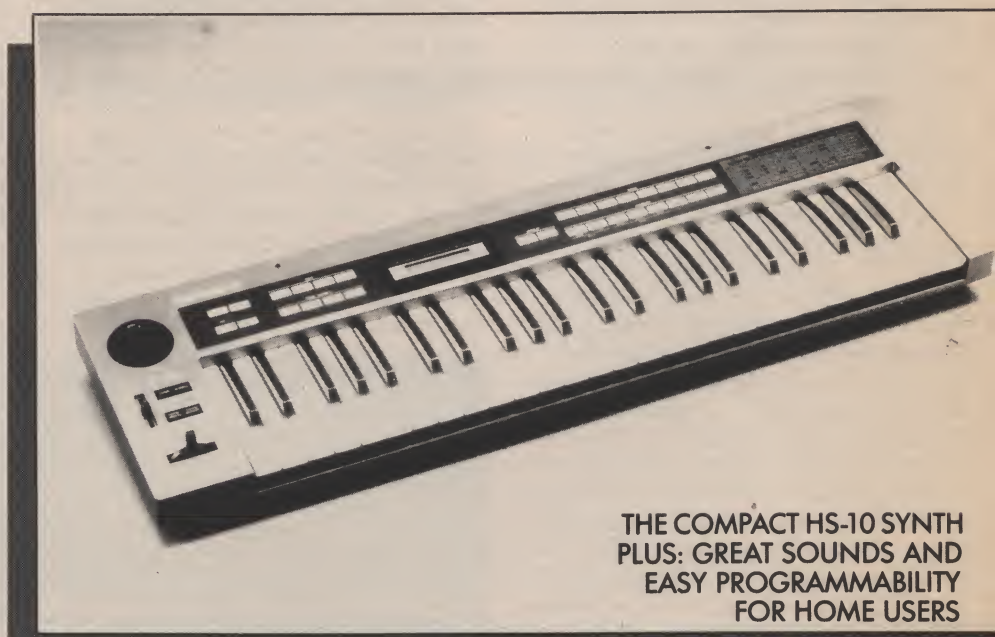
HS-10

A new addition to Roland's Contemporary Keyboard line of products is the HS-10 Synth Plus, a six-voice polyphonic programmable synthesizer with a forty-nine note keyboard. When used as a part of a home MIDI system with a Roland HP-450 Piano, the HS-10 will respond dynamically to the full eighty-eight note keyboard range. This attractive unit features sixty-four presets and sixty-four internal programmable patches which can be saved in the instrument's memory or on cassette tape.

Programming is easy with Roland's new alpha dial. Change single or multiple sound parameters like brilliance, time, modulation time, and modulation depth with one movement on the alpha dial. A backlit, sixteen-character LCD displays sound names, and facilitates loading and editing. Expression, dynamics, and after-touch are controlled with an expression pedal, or may be controlled through MIDI.

The HS-10 Synth Plus utilizes new custom computer circuitry from Roland that makes possible a variety of complex waveforms to provide a full spectrum of harmonic colors. Six separate four-parameter envelopes (with time and level controls for each stage) enable you to create extremely intricate articulations. A pressure-sensitive Pitch Bend/Modulation Lever allows more expressive performances.

In addition to a Volume control, switches are provided for Portamento, Chord Memory, and Octave Transpose (Down/Normal). The HS-10 has MIDI In, Out, and Thru Connectors, two output jacks, and jacks for headphone, hold pedal, foot switch, and foot control, as well as a memory protect switch.



THE COMPACT HS-10 SYNTH PLUS: GREAT SOUNDS AND EASY PROGRAMMABILITY FOR HOME USERS

MKB-200

Roland adds a new five-octave, weighted-action keyboard controller to their line of MIDI Mother Keyboards. Designed to work as a master MIDI controller for Roland's MIDI sound modules, such as the MKS-series, or with any MIDI keyboard system, the new MKB-200 features after-touch and velocity sensitivity for expressive playing.

With the new MKB-200, you can call up all of the performance control function parameters in your MIDI system with the touch of a button. Up to 128 user-programmable programs for your system can be memorized and stored on the M-16C RAM (Random Access Memory) cartridge provided with the instrument. If you frequently work with different system configurations, each set-up's performance data can be kept on separate M-16C cartridges. These programs can include information such as key transpose, after touch on/off, dynamic sensitivity, split point, MIDI channel assignments, keyboard mode, and program changes.

The MKB-200 can transmit MIDI information on two MIDI channels, with Poly or Mono mode and Omni On/Off assignable for each MIDI channel. This enables two MIDI sound modules or MIDI-equipped instruments to be played simultaneously in either dual or split modes.

A simplified front panel provides a Pitch Bend/Modulation lever and controls for other commonly used functions. Sliders include MIDI volume and modulation (rise-time and depth), and switches are provided for program change, keyboard mode, bender/modulation assignment to the entire keyboard or upper keyboard only. A manual function switch accesses additional control keys assigned to specific functions including MIDI channel and mode selection, dynamic sensitivity, after-touch on/off and key transpose. Jacks are provided for remote switching of program changes and modulation with a DP-2 Foot Pedal, for an EV-5 Foot Volume Pedal, and for a DP-6 Damper Pedal included with the unit. ▶

MIDI SYSTEM CONTROL GETS EASIER WITH THE MKB-200 MIDI KEYBOARD CONTROLLER

NEW

MC-500

An ideal compositional tool, Roland's MC-500 MIDI sequencer with a storage capacity for more than 20,000 notes provides extensive music editing capabilities and features a 3 1/2-inch disk drive. Performance data can be loaded and overdubbed from MIDI instruments into the MC-500 in real time or step time, and then stored on floppy disk. Approximately 100,000 notes can be stored on one 3 1/2-inch disk.

MC-500 MICRO COMPOSER: A POWERFUL MIDI SEQUENCER WITH BUILT-IN DISK DRIVE

Four tracks are provided for note entry plus a fifth rhythm track for MIDI drum programming which stores 999 bars and ninety-nine rhythm patterns. The tempo of an entire song can be programmed using the tempo track. Sophisticated multitrack recording is possible on the MC-500 by merging two or more tracks together, and the MIDI Channel assignment of all original track data is retained after tracks are merged. In addition, you can edit individual tracks after they have been merged together.

Punch in and out is possible, even in the middle of a bar. Individual notes or entire bars of music to be inserted and deleted easily. A twenty-character, two-line LCD prompts you through sophisticated editing or rhythm entering. The most subtle nuances that make up a musical performance such as gate time, duration, note number, and velocity can be altered using the microscopic editing facility and the ten-key pad. Copying, inserting, deleting, erasing, transposing, and MIDI channel shifting functions can be performed from any bar in the music for any number of bars. Songs can be stored in eight individual song areas in the unit's memory and then chained together.

An alpha dial is provided on the unit for setting tempo (10 to 250 beats per minute), selecting data, inputting data, and so forth. The MC-500 also features sequencer control switches for Reset, Skip, Load, Pause, Stop, Play, and Save.

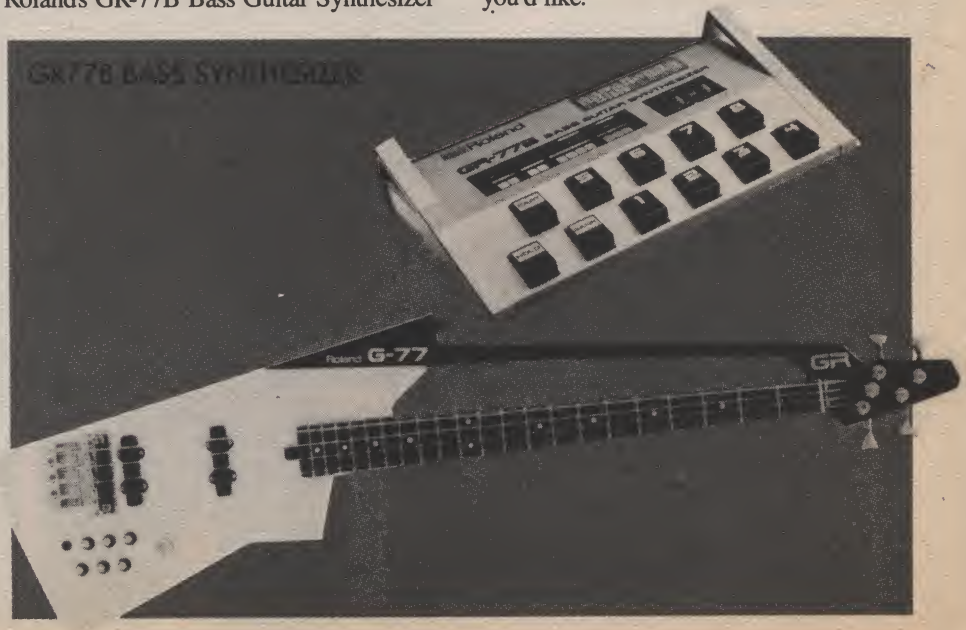
MIDI information (including System Exclusive) can be inserted at any point in the music and edited from the unit's ten-key pad. The MC-500 can send and receive MIDI Song Pointer data, which will allow "chasing" to video or multitrack tape with SMPTE time code when used in conjunction with Roland's SBX-80 Sync Box. The unit also features two MIDI outputs that can be assigned to any or all MIDI channels.

GR-77B

Destined to be as popular with bass players as the ground-breaking GR-700 Guitar Synthesizer has been with guitarists, Roland's GR-77B Bass Guitar Synthesizer and G-77 Bass Guitar Controller combine the flexibility of a keyboard synthesizer with all the expressiveness of a bass guitar. The GR-77B features all the elements found in the GR-700 Guitar synthesizer–superb sound quality and superior tracking capabilities–plus all the programming features found on a MIDI keyboard synthesizer. The GR-77B provides one CPU (Central Processing Unit) per string to ensure no delay or loss of delicate fingering nuances.

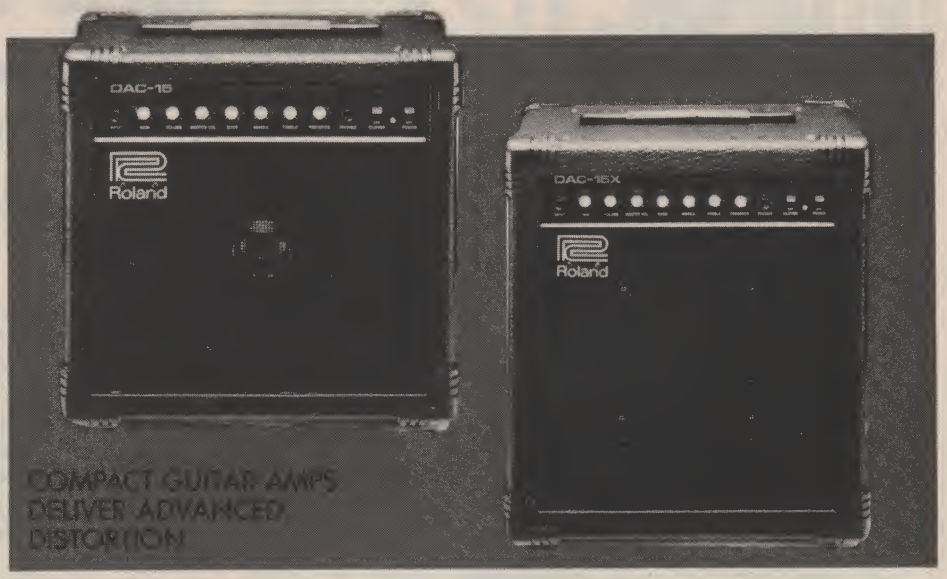
The GR-77B offers eight Digitally Controled Oscillators (two per string), four VCFs, four VCAs, and two envelope generators per string, plus LFO modulation and Stereo Chorus. Pitch bend and VCF changes can be accomplished via foot pedal, leaving both hands free for playing.

Sixty-four patch programs can be stored in the unit's memory, which can be doubled using an optional memory cartridge. Patches stored in memory can be edited to the players taste. With the optional PG-800 Programmer (the same device used to program Roland's JX-8P Keyboard Synthesizer), the bass player can synthesize sounds from scratch. Because the sound data of the GR-77B Bass Synthesizer and the JX-8P are compatible, memorized sounds on cartridges are transportable between the units. There's also a latch mode hold function that enables you to sustain any sound for as long as you'd like.



GR-77B BASS SYNTHESIZER

TR-505 COMBINING KIT DRUMS AND LATIN PERCUSSION TO PACK A POWERFUL PUNCH



COMPACT GUITAR AMPS DELIVER ADVANCED DISTORTION

TR-505

Roland introduces the new TR-505 Rhythm Composer, a compact, lightweight, and powerful digital drum machine that packs a big punch at a price musicians will appreciate. This handy unit features sixteen PCM drum sounds, including five Latin percussion voices. The voices are organized into eight groups: bass drum, snare drum, low/mid/hi tom/timbale, hand clap/rim shot, closed/open hi-hat, low/hi conga, low/hi cowbell, and crash/ride cymbal.

The TR-505 is MIDI compatible and has a memory capacity of forty-eight programmable rhythm patterns, forty-eight preset patterns, and six tracks, delivering a total of 423 bars of music. All drum and percussion sounds in the unit can be played by directly tapping the sound keys or may be dynamically controlled using an external MIDI controller, such as Roland's PAD-8 Octapad. A tape interface function (Save, Load, Verify) allows you to save rhythm track data you've programmed into the TR-505 on cassette.

The TR-505 provides MIDI In/Out Connectors, Omni On/Off, MIDI Channel and Note Number setting, and a Dynamics setting with Key Velocity. The easy-to-read Liquid Crystal Display shows useful data such as Scale, Rhythm Pattern, Track Number, Bar Number, Pattern Number, Mode, Tempo, and so forth. The TR-505 can be operated with batteries or AC power.

DAC-15X

DAC-15

The newest additions to the Roland line of guitar amps, the DAC-15X and DAC-15, are compact, versatile guitar amplifiers that produce a wide scope of clean and over-driven sounds at affordable prices guitarists will understand. Both the DAC-15X and DAC-15 share the same power amp specifications (15W RMS at 8ohms) and preamp design. The preamp consists of a three-stage control section with Gain, Volume, and Master Volume controls enabling the user to determine the overall input gain and varying degrees of clean or overdriven textures.

For greater distortion control, the DAC-15X and DAC-15 feature a new distortion circuit called "Clipper." When this switch is engaged, the Clipper circuit adds harmonics and warmth to the overdriven signal. This combination of harmonics and warmth also increases the sustain of an instrument's sound.

The four-band active equalization section of the DAC15X and DAC-15 consists of Bass, Middle, Treble, and Presence controls with cut and boost capability of 12dB. The DAC-15X features the unique speaker configuration of four five-inch speakers while the DAC-15 features one eight-inch speaker. Both the DAC-15X and DAC-15 are perfect for all recording applications and come equipped with a headphone jack for private practice.

For more information contact Roland Corp. US, 7200 Dominion Circle, Los Angeles, CA 90040

MUSE

MIDI Users Sequencer/Editor

For Apple IIe, IIc, II Plus and Commodore 64 computers

- Eight-track, real-time MIDI sequencing with 6,000 note (12,000 MIDI event) capacity
- Window-oriented user interface that's easy to use and fast
- Optional joystick or game paddle operation
- Automatic start and stop recording anywhere in a track
- Cut-and-paste editing, auto-locate, and sequence chaining
- Selectable time signature and variable real-time tempo control
- Tracks can be selectively transposed, muted, or merged
- "Phrase coherent" auto-correction capabilities (resolution range: quarter notes to thirty-second note triplets)
- Synchronization to external MIDI clock or tape
- MIDI channelization of tracks
- Global and selectable track erase
- Looping by song or individual track length
- Filters for Aftertouch, Program Change, and Mod Wheel data allow you to conserve memory
- On-screen tempo, measure, and memory indicator
- Selectable metromone and MIDI Thru control
- Load and Save sequences to disk

User Comments

Composer/arranger Lewis Ross is using MUSE extensively on an upcoming solo project for Revere Records:
"Composing with MUSE is much faster and much more efficient than working with a multitrack tape recorder alone. You can find out if a musical idea is going to work much more quickly. It has knocked off about 40 percent of the time I used to spend diddling around with the tape deck. I do most of my initial work with MUSE, getting all the parts and overdubs down first before I even go to the tape deck. After I go to tape, I create other parts by recording into MUSE synced up to the taped material, or by adding acoustic instruments directly to tape. MUSE is so friendly to work with, everything happens the way you want it to!"

Recording artist/producer and college professor George Shaw uses MUSE in teaching music classes and in his recording work:
"The organizational approach of the program is the most musical and composer-friendly I have seen in music software. It works just like a tape recorder. You don't have to be a computer expert to use MUSE. I've used MUSE extensively with students who have no computer background and right away you can get them started creating music. With MUSE, anyone who can count and read English can make music."

Hardware Required: Apple IIe, IIc, II Plus (64K) or Commodore 64, Roland MPU-401 Intelligent Interface, Roland MIF-APL interface card for IIe and II Plus (J. L. Cooper MPU-401 interface card for IIc), and any MIDI instruments.

MPS

Music Processing System

For IBM PCs (and most compatible computers)

- Eight-track real time MIDI sequencing with 10,000 to 65,000 note capacity (depending on installed memory)
- Fully menu-driven using PC function keys (on-screen menus always visable)
- Three Modes: Song (real-time sequencer), Score (standard notation editor), and Print (for printing scores)
- Full cut-and-paste editing of phrases for easy arranging
- Automatic punch-in and punch-out recording
- Multiple time signatures in any song and variable real-time tempo control
- Tracks can be individually transposed, muted, merged, and channelized
- "Phrase coherent" auto-correction (resolution: eighth notes to thirty-second note triplets)
- Syncronization to external MIDI clock or tape
- Continuous controller filter allows conservation of memory Interactive, individual note editing in standard musical notation
- Real-time score scrolling during playback
- Text may be included in any muscial score
- Cut-and-paste editing of scores into high-resolution print files for dot matrix printing

User Comments

Film and television composer William Goldstein:
"I love this program for its flexibility in regards to editing and recording. In my system, I use MPS to run my ten synths. I don't use a multi-track tape machine–MPS is my recorder. When scoring for film, MPS allows me to improvise against the picture in real time and then move the hits if they aren't right. I can add a beat here, take one out there, and make all kinds of subtle refinements with MIDI"

Dean of the College of Music at the University of Colorado in Denver, Roy Pritts:
"As a composing and performing tool, MPS is the most composer-friendly software available for IBM PCs. The program speaks the language of music. The musical and computer syntax are all well thought-out and well prepared. MPS enables composers to develop their musical ideas to the fullest."

Hardware Required: IBM PC or full compatible (256K minimum RAM to run, 320K minimum RAM to print scores); IBM Color Graphics Adaptor (CGA), Enhanced Graphics Adaptor (EGA) display board, or full compatible (monitor need not be color); Roland MPU-401 Intelligent Interface; Roland MIF-IPC interface card; any MIDI instruments

Compatible Computers: IBM PC, XT, AT; Compaq Portable; Deskpro, 286; AT&T 6300; Tandy 1000,1200; ITT XTRA Color System; Sanyo 885 and Portable; NCR PC4.

SJE

Super Jupiter Editor

For IBM PCs (and most compatible computers)

- Edit, organize, and store MKS-80 Super Jupiter tones and patches on disk
- Sixty-four individual patch and tone settings can be organized into Volumes, corresponding to complete Super Jupiter sound files
- Twenty Volumes form a Library (store up to 1,280 settings)
- Several Libraries can be saved on one disk, providing instant access to thousands of sounds
- Fully menu-driven commands are activated by a single keystroke
- With the Tone Summary screen, view and edit all sound parameters at a glance
- With the Patch Summary screen, view and edit patch parameters for all eight sounds in any MKS-80 sound bank
- Change the MIDI channel setting of the MKS-80 with SJE
- SJE can be integrated with Roland's MPS software to form a complete sequencing and sound editing environment

User Comments

Composer/computer musician Gary Chang:
"I have four Super Jupiters, and with SJE I can address each by its MIDI channel. Plus it's really great to be able to see all parameters at a glance on the screen when programming with SJE. That makes things easier because I no longer have to repatch extensively. Since I use MPS to compose, I've integrated SJE with it using Desqview from Quarterdeck. All I have to do is switch windows to save the sounds for every song. I store all my sounds in archive libraries on disk using SJE. That way, when I go to sessions I just take along RAM cartridges with the programs I want."

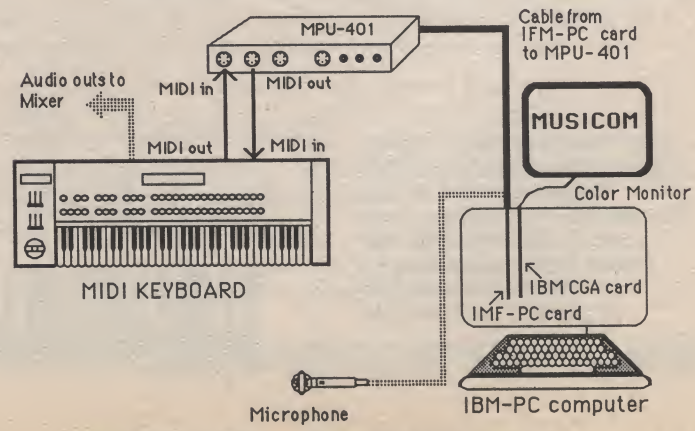
Staff engineer/programmer at Unique Recording, Steve Peck:
"When I'm programming sounds, I like to see what I'm doing as well as hear it. I'm no computer expert, but I find that the SJE editing system is plain, simple, and easy to operate. It works in a musical fashion, and the storage capabilities are fantastic. Plus it's very fast. Saving and loading sounds are instantaneous. For anyone working with the Super Jupiter, SJE is an excellent system."

Hardware Required: IBM PC, XT, AT or full compatible (256K min. RAM); MS-DOS 2.0 or higher; IBM monochrome, color, or enhanced graphics board; Roland MIF-IPC interface card, MPU-401 MIDI Processing Unit, and MKS-80 Super Jupiter

MUSICOM

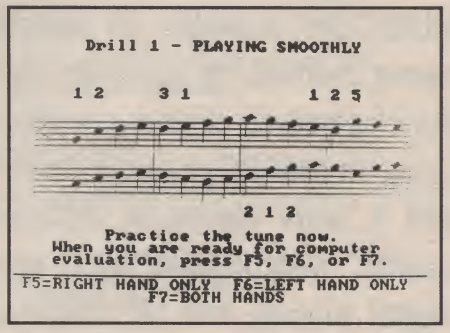
Music Education Software

A comprehensive computer-based music education system that utilizes sophisticated hardware and software techniques to achieve new heights in computer-aided instruction. MUSICOM provides an individualized, self-paced method for learning music at home, in the classroom, or to augment private lessons using an IBM PC or Apple IIe/II Plus computer and a wide range of MIDI-equipped keyboards. Instruments such as Roland's new digital pianos, the HP-5500 and HP-5600, which sound beautiful and are completely sensitive to the subtlest dynamics of a player's touch, or touch-sensitive MIDI synthesizers like the new alpha Juno-2, provide ideal interactive musical instruments for learners. Regardless of which MUSICOM course you choose, you will benefit by developing a familiarity with the keyboard itself which you can build upon as your musical knowledge expands. ▶



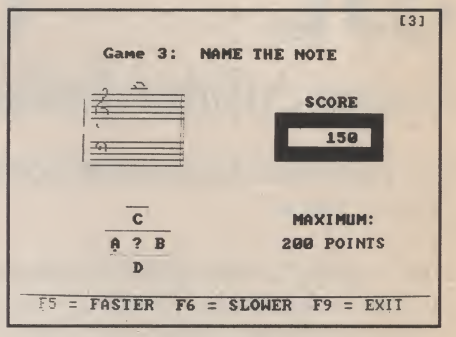
MUSICOM SYSTEM SET-UP WITH IBM PC

The MUSICOM series consists of several courses, each representing six months to one year of conventional music instruction. The initially available courseware offerings include Beginning Ear Training/Sight Singing, Fundamentals of the Keyboard, Piano Technique, and Intermediate Theory. The entire courseware series will ultimately include beginning, intermediate, and advanced levels of all these topics, as well as instruction in jazz/rock and popular music harmony and playing technique, plus courses on specific instrumental technique for the clarinet, trumpet, guitar, and so on. Each MUSICOM course incorporates appropriate lessons relating to music theory, and in addition there are specific courses designed to cover theory in more detail. This integrated approach makes MUSICOM ideal for learning music on your own, or in conjuction with a teacher as a supplement to traditional methods of instruction.



MUSICOM shows clearly what to practice in standard musical notation. Notes are individually highlighted as soon as you play them. Numbers help to show which fingers to use when playing specific notes.

Each course employs a variety of instructional techniques including tutorials, drill-and-practice exercises, and musical games. During the exercises and games, numerical scores are given to indicate a student's progress. A musical passage to be imitated is displayed in standard musical notation on the screen along with the student's response, providing valuable visual feedback. Both versions can also be played back for aural comparison. All MUSICOM courses are entirely self-paced, providing students with personalized instruction. Specific topics are presented from various perspectives in a cyclic manner to reinforce concepts. The interactive nature of MUSICOM enhances the learning process and eliminates the boredom so often encountered in other educational software.

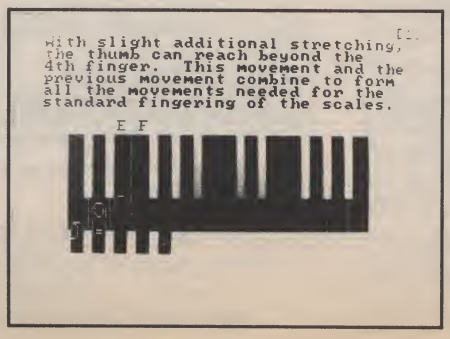


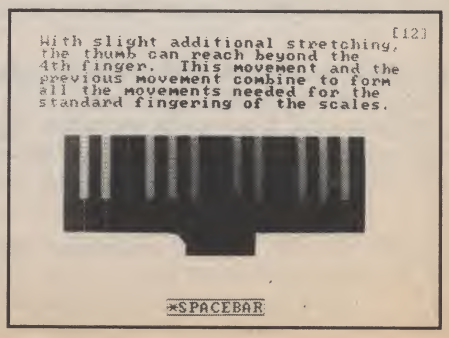
MUSICOM employs a variety of pedagogical techniques to teach you to identify notes on the staff. Multiple-choice games is one way MUSICOM makes learning fun.

Now let's take a closer look at one of the latest additions to the MUSICOM series, the P1 Rapid Piano Course. This course is designed for anyone interested in learning to play the piano quickly. With its engaging approach to computer-assisted music instruction, this program enables you to achieve a proficiency in basic piano playing technique easily. Relevant topics in music theory are also covered as you develop an intuitive familiarity with the keyboard. This course allows you to master basic piano technique at your own pace, having fun in the process. It is designed for those who wish to learn on their own without a tutor. It is also well suited to assist classroom and private piano teachers. Help screens are available throughout the course to provide additional information about specific topics. Graphics are used extensively to illustrate hand positions, fingering patterns, and musical notation.

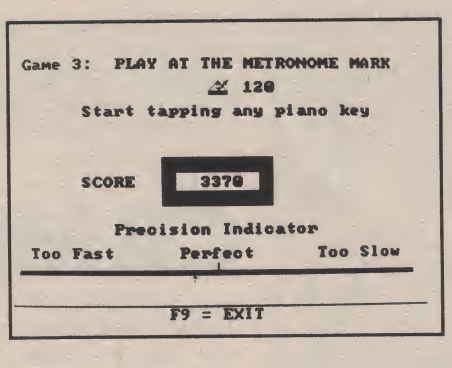
Lesson 1, "Playing the White Keys," begins with a short user guide which orients you to the program's use of function keys, screen layouts, and general organization. The octave division of the keyboard is illustrated, note names are established, and the characteristic key orientation within the octave (the organization of the black keys into groups of two and three) is discussed. These tutorials are followed by games that help you identify the placement and names of the keys, while developing a physical feel for octaves.

Easy-to-understand, step-by-step pictures explain standard fingering of the scales. Complicated techniques, such as the thumb-under-the-fourth-finger maneuver, are clearly presented for beginning keyboardists.

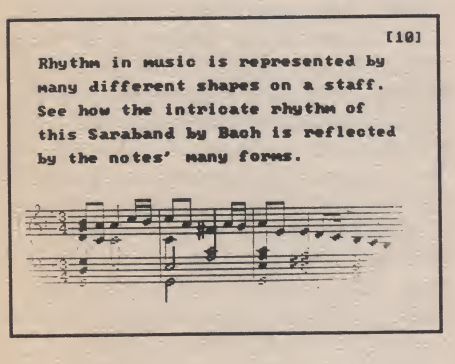




Developing a good sense of rhythm requires familiarization with various tempo indications. This takes time and practice, that's why MUSICOM is designed to allow you to progress at your own rate.



Lesson 2 is entitled "Pitch Notation" and starts out by establishing the location of middle C on your particular keyboard. Basic music notation is introduced with staves, clefs, ledger lines, and accidentals. The games that follow offer the opportunity to practice associating single notes and intervals on the staff with keys on the keyboard. In another game, you use the cursor arrow keys on the computer keyboard to point to the name of the note being displayed on the screen. Drills are also included in this lesson to help you practice playing simple single-and double-hand patterns.

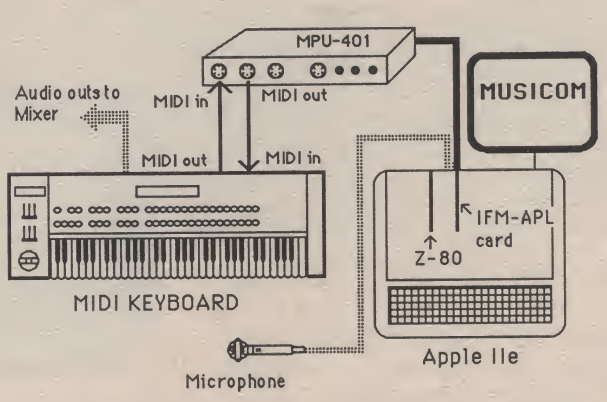


Listening to a familiar composition while seeing it visually on a staff instills a sensitivity to musical form, besides providing an inspirational interlude as part of the learning process.

Rhythm is introduced in Lesson 3 by playing and displaying a Sarabande by Bach. The concepts of beats and tempo are discussed. The games in this lesson are designed to help you learn to recognize and perform various tempi by tapping on the keyboard. They provide valuable visual feedback by displaying a "precision indicator" gauge that tells you if you are tapping too fast, too slow, or perfectly in tempo. Quarter notes are introduced, and drills are presented for practicing two-handed passages written in quarter notes. All of the two-handed exercises in the Rapid Piano course can be played using one hand at a time if desired.

Lesson 4, "Expanding the Range and Rhythm Language," does just that. It begins by displaying a picture of a left and right hand with the standard finger numbers written just above the fingers. Single hand fingering pattern exercises are presented with or without the fingering numbers. The drills in this lesson evaluate not only pitch and rhythm, but when used with a touch-sensitive keyboard, will indicate which notes are being played too softly or too loudly. This encourages you to play smoothly and evenly. One of the games allows you to practice rhythmic patterns, while the final game provides the opportunity to practice everything you have learned during the course.

The P1 Rapid Piano course is only one of a continually expanding series of superb music education software packages from Roland. Intermediate and advanced piano courses will soon join this wide range of modular courseware to complete a detailed, comprehensive, and engaging music curriculum. Whatever your level of skill, MUSICOM is the ideal means to achieve your musical goals.



MUSICOM SYSTEM SET-UP WITH APPLE COMPUTER

ROLAND SOFTWARE EVENTS

Here's a list of upcoming events featuring Roland software. We'll keep you posted on more opportunites throughout the year to see demonstrations of Roland software first hand in your area.

- April 9 - 12: The Music Educator's National Conference (MENC) at the Anaheim Convention Center in Anaheim, California. (Dr. Eldad Giberman, developer of the MUSICOM series of educational music software, will be present to discuss the programs and answer questions.)
- May 5: MPS Master Class with composer Gary Chang at West L. A. Music in Los Angeles, California. (Open to MPS users only, call 213-477-1945 for information.)

MONITOR CONNECTION

CD-240: SUPER HI-RES COLOR MONITOR

The CD-240 super high-resolution twelve-inch monitor from Roland DG offers a resolution of 720 by 400 for superior text and graphics reproduction. The unit features a .31mm dot pitch, 25MHz scan frequency, non-glare CRT, black matrix screen for sharp contrast and long persistence phosphor to prevent eye-straining flicker. The CD-240 is compatible with the Persyst "BOB" board, STB Super Res 400, and other high-resolution boards for the IBM PC and compatibles.

MB-142: BLACK AND WHITE MONITOR

The MB-142 TTL black and white monitor was designed by Roland DG to achieve an ultra high-resolution display for your personal computer. The MB-142's large fourteen-inch screen, combined with its ultra-high 720 by 350 resolution, can display characters that are large and more legible than what you can achieve with ordinary monchrome monitors. By using a special "paper white" phosphor, the MB-142 offers fatigue-free black-on-white viewing or white-on-black at the touch of a button. Another great plus is that the MB-142 plugs directly into the monochrome board of your IBM PC or compatible–just like your present monochrome monitor, and with nothing more to buy. Because of the MB-142's advanced circuitry, you have the ability to mix graphics and text on the same display when using graphic and text boards from such leading manufacturers as Persyst, STB, Paradise, Hercules, AST, and many others.

CAMM-3

It isn't enough to give birth to a bright idea. You have to build that better mousetrap if you want the world to beat a path to your door. In the past, getting a prototype or model of a new product has required the skills of a draftsperson and the expertise of a machinist: The former would take your rough idea and refine it into a set of detailed drawings from which the latter could produce a finished product.

But nothing ever comes out right on the first try. Revising a design has traditionally meant having the drawings redone so that the parts that require any changes can be re-machined. It's impossible to know how many brilliant ideas have died in infancy because of the expense of this process.

Some revolutionary changes to this process are underway, however, which harness the power of the computer in order to speed up and make less costly the designing and producing of models for new products. Computer Assisted Design and Computer Assisted Manufacturing (CAD/CAM) provide the user with an electronic sketchpad upon which even those who can't draw a straight line can create detailed plans and blueprints. Moreover, just as a word processor allows a writer to make changes to a document without having to retype it, CAD makes it much easier to incorporate changes into a design.

The typical CAD program (such as *McCad* which was described in the last issue) gives the designer a number of standard tools. A grid is generally visible on screen, with optional rulers along the top and sides. The user selects what sort of shape to draw on the screen, indicating

where the shape is to be placed and how large it is to be. Circles, arcs, ellipses, free-form curves, squares, rectangles, polygons, and line segments are used to fashion the ultimate design. It is even possible to erase "hidden" lines (such as those that appear behind another surface when the object is viewed in three dimensions) and to indicate measurements between tick marks. These marks need only be placed on the screen: The computer draws the arrows and calculates the distance based on the scale of the drawing.

A number of systems can use the data from a CAD document to drive a manufacturer's fabrication equipment. This version of the Computer Assisted Manufacturing process permits designers to send the completed plans to the manufacturer over the phone lines. A prototype or model can be back in the designer's hands in a couple of days.

Roland DG has gone this procedure one better, through the introduction of a device that allows users to cut out the middleman in the prototype fabrication process: It's called CAMM-3. This sophisticated, computer-driven modelling machine and multi-purpose machine tool connects directly to a number of popular computers via the parallel or serial printer port, and is designed to fit right in, next to the drafting plotter, as part of a designer's workstation. With CAMM-3, CAD designs can be realized directly in a number of media, including plastics, wax, wood, aluminum, and brass.

Design information is sent to the CAMM-3 using a graphics language called CAMM-GL1, which includes all the features of Roland's X-Y plotter language DXY-GL. Programs written in this language will direct the CAMM-3 to cut along all three orthogonal axes: X, Y, and Z. The user can operate the unit manually using the cursor controls or three alpha wheels on the front panel of CAMM-3, or by programming it with the DXY-GL language. Connection to the host computer is made through a Centronics parallel port or through an RS-232 connector.

The machine's operating envelope, or milling area parameters, are 7.1 inches by 5.9 inches by 5.9 inches respectively. It's also possible to specify an offset from the standard origin. The table can be moved in increments as small as 1/100th of a millimeter (.0004 inch), although internal processing has twice that precision. LED indicators on the front of the device give the current coordinate postion, as well as the table feed rate, the spindle rpm (revolutions per minute), and error status.

The spindle itself is designed to take an array of mills and other cutting tools. This allows it to bore, mill, and route. An optional character engraving cutter lets CAMM-3 double as an engraving machine, for making nameplates, plaques, and so forth. A number of other options are available for the system, including various end mills, kits, and a machine vise attachment.

An option of particular note is the SYA-350 data buffer. Designed to be placed between the host computer and the CAMM-3 unit itself, the buffer spools data from the host, feeding it to CAMM-3 as it is required. This frees the host for other uses while the unit is executing a design, similar to the way a print buffer or spooling software allows a computer to go on to other tasks while the printer is processing a long document.

The SYA-350 buffer is built around a 3.5-inch disk drive. The buffer includes both Centronics parallel and RS-232 serial communications ports for input and output. With the buffer, it is even possible to feed stored designs to CAMM-3 without use of a host computer, making the setup practical for small-lot production.

Once again, Roland proves to be cutting a high profile for itself, this time on the cutting edge of advanced technology in the world of Computer Assisted Design and Computer Assisted Manufacturing.

Steve Stevens

Steve Stevens has forged a name for himself as flashy band leader and axe master to Billy Idol. In this exclusive Roland interview, you'll discover the man behind this image, a thoughtful artist with dynamic musical sensibilites and the well-developed skills of a first rate guitarist.

When did you first start working with the GR-700?

I was doing some promotional work in Japan with Billy Idol about three years ago and a representative of Roland invited me in to see one. That was before the unit was being sold in America. The only one available at that time was at a music store in Japan. I had to wheel and deal for it. I told them I wanted to take that GR home with me, that I wasn't going to wait for it. I had a fear that if I left Japan, I would never see the GR again. Fortunately, I managed to get it.

Some guitarists think that the playing skills they've found useful in the past won't work as well with a guitar synth, that they'll have to develop some new skills in order to express themselves with the instrument. Did you have an experience like that?

Anybody who thinks their skill as a guitarist is lost on the GR-700 should think again. I tried to play a SynthAxe, and realized how easy it is to play a GR-700. I've never found any problems with the GR. I think if you're a good player on acoustic or classical guitar, you'll be able to play a GR-700 without any problem. I don't use a guitar pick when I play the GR-700 because I think it really limits the amount of voices you can get out of the unit. If you use a pick, you can only strum single chords or play single lines. I finger pick the GR-700 to get polyrhythms and other sounds happening on it much the same way a keyboardist uses left-and right-hand technique. If the unit is properly set up, the action and tracking are pretty damn good.

Do you own a lot of different guitars?

Not a lot, I have about twenty-five guitars or so. I have three main guitars: One is the Hamer-Steve Stevens model. [*Pictured on the cover of this issue.*] I'm always having different variations of that one built. Another is the Hamer GR-700 controller model. We put a Gibson-style Les Paul tail piece on it, because that kind of tail piece doesn't carry so many of the harmonics. It just carries the fundamental frequencies. The guitar is set up to be dead enough to keep the synthesizer in order, but lively enough to have a good guitar sound. I use a Charvel guitar as well.

Do you use the Hamer guitar controller as a guitar without the synth?

Yes, I have used it that way. The advantage being that in the G-707 you have two humbucker pickups, and in the model Hamer designed for me there's one humbucker and two single coil pickups. The single coil sounds pretty good with some of the GR-700 bell-like timbres, giving the guitar a thinner, brighter sound.

Do you spend much time programming the synthesizer unit in creating your sounds?

No, not really. I have a cartridge with my own sounds on it, but they are basically factory sounds that I've altered. The factory patches give you a good starting point.

How do you use MIDI?

I use the GR-700 to create very full orchestral sounds, which really fills things out. But I've found that certain synthesizers are better than others in carrying the MIDI signal. The Emulator seems a bit slow. We were trying to do something with a grand piano sound using the Emulator and found it to be very late in the track, therefore we didn't use it. We had to send the track through

Photo courtesy The Howard Bloom Organization

a digital delay, flip the tape, and move up the actual track in the twenty-four track mix. It was a long process but it worked.

What is your home studio system like?

Right now I'm using an Akai twelve-track machine, the one that uses a video cassette to record on. I have two Roland SRE-555 Chorus Echos, one I use in my home studio and the other I use on stage. And I use a BOSS HM-2 Heavy Metal Pedal when I record the bass. My guitar roadie J.D. turned me on to that trick. He says that Prince uses it. It sounds really good if you use two tracks to record the bass: one for the direct bass sound and the other for the bass running through the HM-2. That produces a really great sound. Of course, I use the GR-700, with the guitar controller that Hamer built for me. It's one of the guitars we designed together. That's what I use as my main MIDI controller. I have it connected to a couple of different MIDI keyboards in my system.

I have a whole performance-oriented rack that I use in the studio and live, mainly just for my guitar. That includes the SRE-555, the rack-mounted Roland SDD-320 Dimension D and SDE-3000 Digital Delay, and a pedal board consisting of a BOSS CS-2 Compressor, BOSS OC-2 Octaver, a BOSS CE-2 Chorus, and a couple of BOSS PSM-5 Power Supply and Master Switch pedals. Those little red PSM-5s are great. In addition to being a power supply, they can be used as an effects loop selecter. Ordinarily I use three of them in line to select different loops of effects off the main pedal board that are in a chain. That way, I can totally bypass the switching on the individual pedals.

Basically, I always start with one mono output from the GR-700 and send it to the SRE-555, from there it goes into the Dimension D, which turns the signal to stereo. I use that chorus/echo effect and Dimension D sound on the GR-700 at all times. It gives my GR a characteristic sound that people have become familiar with, and sets it apart from any keyboards being used. I play it directly through the board, not through an amp. That's something I could never understand about some guitar synth players: They're playing a synthesizer, but they go and send the sound through guitar amps and it sounds horrible. Guitar amps just don't have the fidelity to carry the bottom and high-end frequencies.

Are you using the GR-700 on the new Billy Idol album?

At the moment, it's Billy, Keith Forsey [*the producer*], and myself in the studio working, so I will lay down any keyboard ideas with the GR-700. If they're not spot-on, we might have a keyboardist come in later and play them manually on a keyboard. At least we can get the idea down without losing too much trying to translate it. I can just play it for someone.

I also use the MSQ-700 sequencer, I have three of them now. All the basslines on Billy's records are recorded with the MSQ-700. I sequence them from the Jupiter-8 with the MD-8 MIDI/DCB Interface, though once in a while I will sequence parts using the GR-700.

How is the recording going?

It's going real well. Right now we're in the final stages of recording at Right Track Studio. We did some pre-production work in one of the smaller rooms at Unique Recording. That helped to keep costs down. We'll start mixing it in about two weeks, maybe there or at a studio called Oasis in California. I think it's scheduled to be released in early April.

People don't usually associate rock 'n' roll music with sequencers.

I think people will be surprised. Our new record is a lot different than the last one in that respect. I think after this one, people won't know what to expect.

How would you describe the difference?

I would say this record will sound a lot more self-contained because basically no other musicians are being used on it. Most of the drums are sampled, and there is very little real bass on it. It's all sequenced bass, which is a lot easier for me to play with because it really sets you right. It really gets your playing together. I think my playing has gotten a lot better because of it. We're using the same basic approach we've taken before, in that it will be dance-oriented music using hard rock guitar.

What other projects have you been working on?

I worked on Rick Ocasek's forthcoming solo record, but I just played straight guitar on that. I used the GR-700 on a Thompson Twins record that I went to France to record with them, but I don't know where it ended up on their record. That's always the problem with playing on someone else's record. It's really enticing when other artists ask you to play on their records. The reality is that it's not your record and you're not going to be there for the mix. I haven't found many people who really know how to mix guitars that well, and unless you can afford to bring your own engineer around with you and have him present at the mix, you have to be really careful of what you're doing to make sure that the people you're working with absolutely understand where your guitar is supposed to be in the song. Another problem at the time was that Tom Bailey was producing the album himself, and he became ill about a week after I started working with them. Eventually they had to get another producer, and that's when Nile Rogers came in. Nile wasn't involved when I cut the guitar parts, so maybe he didn't hear it the same way. The Thompson Twins were really great people to work with though.

The most recent thing I have been working on is for a feature film from Paramount called *Top Gun*. The score was written by Harold Faltermeyer, and we worked together on the title track which will inevitably be the theme from the film.

What kind of sound do you usually go for with the GR-700?

I like to pick sounds that will work well with the original sound of the guitar, because it is a guitar synthesizer. One of the annoying things about something like the SynthAxe is that there is no guitar sound emanating from it. I think one of the worst things that can happen is to use the guitar synthesizer on a record and then, because you're a guitarist, not get any credit for it because it sounds so much like a keyboard synthesizer and the average person listening doesn't think you're the one playing that part. I look for an original guitar sound that's going to fit a certain musical part first, and that dictates to me what the synthesizer sounds should be, because they have to be married together. Obviously if it's a full-blown kind of thing, where you're playing through a Marshall or something, you're not going to use a bell-like sound. In that instance I would go for more of a brass-type sound, which has a certain distortion to it. If it's a real clean sound and you're playing directly through a console, I'd go for more of the bell-like tones.

Do you find that you draw upon your knowledge of orchestration for the kind of sound texturizing you do with the GR-700?

I find I use that more when I'm working with keyboard players, someone like Harold Faltermeyer. I don't find it applies much if I'm using something like a string patch on the GR-700 though. Basically you can get only six notes at a time on the guitar, and usually the chord voicings are fourths and fifths away from each other, so you can't really arrange exactly like strings. My knowledge of orchestration applies more when I'm using the GR-700 as an arrangement vehicle to write independent bass lines, counter melodies, and overdubs. That's when I find it useful.

How would you contrast your approach to playing the GR-700 with other musicians that use it?

I don't really know how they approach it. I know the end results because I have heard his music. It seems to me that Robert Fripp goes for more Eastern-type sounds on it, which is interesting. I think Adrien Belew does a lot of really interesting things with the GR-700. He seems to incorporate it with the original guitar sound really well.

Why should a guitarist consider expanding into sound synthesis?

I don't know, because they're becoming dinosaurs. Guitarists are so steeped in the whole blues thing, what kind of strings they use and all those ridiculous things. I don't really care about that type of thing. I care about music. The thing is, the guitar is one of the last instruments remaining where musicians are still competing on a sort of gymnastic level in terms of playing technique. You don't find that with keyboard players anymore. You did find it in the 1970s, with people like Rick Wakeman. Now things have changed because you can program a musical part to play faster than any human could. Music and the ideas are what count today. With the guitar, you're still dealing with the Neanderthal idea that the faster you play, the better you are or something. There are a lot of people who can play really fast, but they're saying nothing. Once guitarists get over that kind of thinking, you will find more of them will embrace the idea of using guitar synthesizers.

It all just depends on the player, really. Someone like Eddy Van Halen doesn't use a guitar synthesizer, but he makes his guitar sound synthesized through his playing technique. Many musicians are synthesizing sounds and ideas, but they're not using an actual synthesizer.

A guitar is just a voice, it's just a vehicle for what's inside your mind. I think it's important for a guitarist is to listen to music for what it is, as music, and not just listen to the guitarist per se. Otherwise you end up with the same tone as the next guy and the same set of riffs. Just because you play the same instrument as someone else doesn't mean you will have things in common with them. Some guitarists might find they have more in common with keyboard players.

What do you consider your musical influences?

I've gotten a lot of my ideas from keyboard-oriented music. I like to listen to things like Jimmy Smith or Curtis Mayfield. One of the people I liked when I was growing up was Keith Emerson. I think it's important to listen not just to musicians who play the same instrument as you, because it doesn't always provide enough of a different slant on what you're doing.

What about the future of your own career, in addition to working with Billy Idol?

It's hard to say; you can't really map out what you are going to do three years from now. Hopefully there will be a film score to do at one point or another. I'd like to do that, it would be fun. I'd like to produce more people. I produced a track for an artist that's been released on Chrysalis Records, and that was fun. His name is Simon F. The album had previously been recorded, but I guess it wasn't really geared towards an American audiance, so they asked me to produce one track for the record. What eventually happened is the track I produced was the first single, the only single. When people heard it they expected the rest of the record to sound like that, and it doesn't. Hopefully, if I get another production job, it will be for the whole record.

In November of this year I'll be recording a solo album for Warner Brothers, so I guess that's the beginning of the rest of my career.

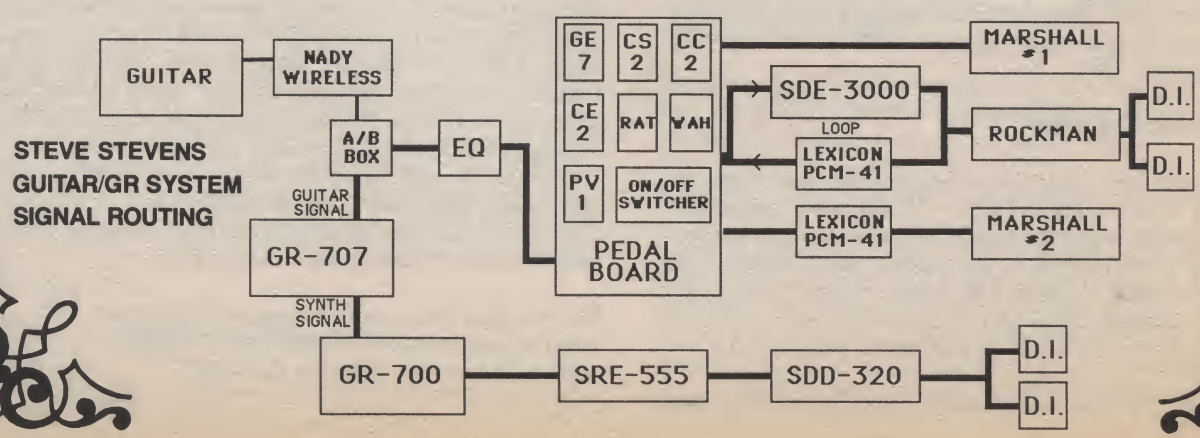
It's not like I will be leaving Billy Idol though; this will just be a record that I want to do on my own.

What kind of record is it going to be?

It's difficult to say, but I imagine it will be more urban or something–I hate to use that word. I'll be singing on it, and we're going to attempt to use strings and horns on it, with all the synthesized properties and wildness coming from the guitar itself. Once again, being that it is my own record, I don't want to get into a situation where you have keyboard synthesizers and guitar synthesizers and some confusion as to who played what. I would like to do all the wildness on the record, and then have acoustic strings and horns do the more traditional parts.

You are someone many musicians can identify with, having been involved with struggling bands over the years. Now that it's all paying off, do you have any reflections on the whole experience?

There are certainly a lot of heartaches involved in being a musician. I guess it's just that I wanted to be recognized, that I wanted people to hear what I was doing. I never considered any other options.



STEVE STEVENS GUITAR/GR SYSTEM SIGNAL ROUTING

SYNTHESIZERS COMPUTERS AND EDUCATION

by Robert Carr

A ROLAND SPECIAL REPORT

- **Elementary, Middle, and High School Levels**
- **College and University Music Programs**
- **Adult Education and Music Conservatory-Type Programs**

At one time the combination of synthesizers, computers, and education seemed unlikely, given the initial costs of hardware and the total absence of appropriate software. But as *Megatrends* author John Naisbitt points out: "Education in America is in the midst of a revolution."

The primary cause of the revolution Naisbitt is referring to is the synergistic interaction of new technologies. Now, for relatively low cost, educators have access to the power and flexibility of high-quality computer-based tools that make it possible to transcend many of the frustrating restrictions so long a part of conventional educational environments. At the same time, the process of change that technology is engendering proves to be extremely fulfilling, challenging, and exciting, not only for students, but for teachers as well.

In this information age, when "knowing what's new" is becoming America's primary occupation, the opportunity to share ideas and experiences becomes a valuable investment in the future. To make a timely deposit in the collective Education portfolio, we contacted about two dozen teachers, administrators and students around North America, all of whom are currently working with or are planning to work with Roland gear in some aspect of music education. The range of projected applications and the results many are already experiencing paint an optimistic picture of exciting musical programs quite unlike the traditional approaches to learning music that we've all grown so accustomed to. It is our hope that the descriptions that follow will prove inspirational to administrators and teachers, to students and their parents, as examples of how your local music education programs can be enriched by today's new music technology.

Convergent Diversity

Innovation is being put to the test in virtually every area of music education: Group keyboard instruction, arranging, composing, orchestration, guitar instruction, new music experimentation, in high school bands, and for elementary school projects. Roland's MPS software and MIDI instruments are even being used in home publishing to produce customized textbooks on a limited-volume basis.

Beth Wright teaches classical music (antiquities through Romantic period) at the eighth grade level, and American music history to seventh grade students at St John's School, a private school for gifted children (120 IQ and up) in Houston, Texas. Her main problem has been finding textbooks that can adaquately augment her curriculum and style of teaching. "So many fine arts books are either watered down or more detailed than a middle-school student needs or wants," she explains.

Wright purchased an AT&T computer (IBM compatible) and word processing software to write text for her classes. Then she added the MPS software to score and print musical examples that will enhance the textual presentation. "As a voice major, I use a piano everyday for class, but I don't consider myself a keyboard player," she says. "With MPS and my Juno-106, I can play specific parts, like a theme and variations, into the computer, edit and arrange the music on the screen with the computer keyboard, and use the Score mode to print them out."

Wright also plans to produce audio cassettes that contain her musical examples as well as prerecorded performances of the compositions she's discussing. "The parents want me to put together a text workbook and taped lecture series for them, too," she says. "One of the nice features of the Juno-106 is that I can reproduce so many instrument sounds, and the software lets me layer them to demonstrate counterpoint and harmony."

Beth Wright's story is not atypical. Many schools are quickly discovering their own unique needs and are finding equally unique ways to meet them using synthesizers, computers, and/or any of the flexible and easy-to-use electronic components currently available.

Common Trends

Looking across the full range of educational institutions–from elementary schools to middle and high schools, community colleges to universities, dedicated music schools to stand-alone facilities offering workshops and seminars–reveals several patterns and common characteristics. For example, the ways that electronic music hardware and software are being used can be broken down into roughly four categories: (1) as single instruments; (2) in small, informal synth labs with drum machines and maybe a computer; (3) in large lab/classroom environments with at least twelve stations (one or more MIDI keyboards per station) interfaced via a Roland Teaching Lab mixing console, plus at least one sequencer and

Owen Clark (pictured above) has developed an innovative music curriculum that excites elementary students by integrating synthesizers with standard classroom instruments.

usually a computer with software for sequencing and patch storage; and (4) in multiple labs and recording/practice studios outfitted like the single lab setup, with the addition of recording equipment (multitrack analog tape recorders, mixing console, mircrophones, and so forth), and a variety of sequencers, computers, and software packages for sequencing/composing. Although the amount and type of equipment varies a great deal within each of these four categories, the dollars invested by these schools in the new music technology tends to increase as the grade level increases.

In addition, many teachers, especially at the elementary, middle and high school levels, acknowledged the need for a consistent program of music education that extends through all grade levels. The reason is not so much to produce better players, although this is an important consideration, but more to help students develop well-balanced backgrounds that can be of benefit to them regardless of whether or not they pursue a career in music.

Another common thread was the enthusiasm and dedication exhibited by practically all the educators, administrators, and students for the projects and programs they're involved in. With the advent of the new music technology, everyone is sharing in a discovery process, which is a course of action that appears to foster a healthy learning environment. Many participants seem to be motivated by the inner urge to grow and enjoy rather than by the outer pressures to achieve good grades or to complete the assigned curriculum.

Elementary Schools

Owen Clark, a full-time percussion instructor at the University of Manitoba in Winnepeg, participates in a volunteer pilot program called "Artist in the Schools," which reaches all the elementary schools in the province. The curriculum in based on jazz, rock, latin and pop music, and aims to integrate synthesizers with standard Orff (Carl Orff System) classroom instruments, such as a whole range of small octave-and-a-third xylophones in the bass, tenor, alto and soprano ranges, and percussion instruments (triangles, tambourines, shakers and hand drums). "The elementary kids are very enthusiastic about the equipment," reports Clark. "Instead of begging them to come to rehearsals, our major concern is trying to keep them out of the room. We just got an Apple IIe, and already one student has composed some music that we used in a concert. We're encouraging that kind of activity right down to the grade two level,"

Clark works with a colleague, Joanne Williams, whose interests include mime and drama. At the beginning of the year (this is the second year of the program), they pick a target date and schedule a concert, which usually incorporated her theatrical disciplines as well as music. The last performance was literally a multimedia presentation, complete with rear screen projection, costumed kids doing Laurel and Hardy-type mime presentations, and a pit band playing old-fashioned vaudeville music. "Once the kids get past the fact that the instrument can make all sorts of funny and weird noises, we start to create scenes," explains Clark, "We assign them little projects; i.e.: one or two students may read a short story while a third student tries to provide the appropriate sound effects. We also use the synthesizer to teach sound shaping. Kids take turns playing a sound; then they cover the envelope controller with their hand, move one slider, and the class has to tell them what they moved (the attack, decay, sustain or release lever). It's surprising that the kids pick it up faster than I do."

Owen Clark and Joanne Williams recently won the Hilroy Fellowship, a competition across Canada for innovative teaching methods. Motivated (in part) by this recent recognition, planning is underway for a cooperative musical comedy-type project that integrates kids from elementary schools with kids from junior and senior high. (The group so far includes three keyboard players, three percussionists, a bass guitar, a small horn section and vocalist.) "If the administrators in the area were not totally behind the program, we wouldn't have as much equipment as we do," says Clark, "Just about every school in the division has a synth of some kind, and we have another four synths on order for next season. When you consider that a Juno-106 with 128 sounds costs about the same as one bass xylophone, the investment in electronics makes a lot of sense."

Band Programs

Although many middle and high schools support an active instrumental program (concert band, stage band, and so forth), they seldom offer any opportunities for kids who study piano. But electronic keyboards, like the Juno-106 with its transpose key, are expanding the realm of possibilities. In fact, synths are becoming the instruments that cover all the bases. "I have a lot of people moving in and out of the neighborhood, and I'm often left without an instrument or two in the concert band," says Joseph DiPierto, band director at the Lincoln Middle School in Syracuse, New York. "I use the Roland keyboard to fill in what I'm missing. For example, even though I'm minus a baritone section this year, I have a very talented Hungarian girl who can play those parts on the Juno-106. Usually I just pass out the parts, and whatever instrument we need, she hits the transpose key and plays the part."

In Kokomo, Indiana, the Kokomo High School jazz band is just starting to experiment with the Juno-106 and their MPS software package. According to Mark McHenry, director of band, they want to try programming their own Fender Rhodes sound to augment the sound of their band.

On the adminstration side, Dr. Jack Welker, the coordinator of music education for the city of Kokomo, states that the purchase of an Apple IIe and an IBM PC has been well worth the investment.

(With a Quadlink board in the IBM, they can also run Apple software on the PC.) "We've been using the computers frequently for charting the football show, keeping inventory records, and doing general office management chores, like word processing. By just adding the MPS software, the band can use the computer as a compositional aid, too."

Many schools are quickly discovering their own unique needs and are finding equally unique ways to meet them...

For Brent McLaren in Perth, Ontario, synths don't only replace missing accoustic instruments, but occasionally the whole Collegiate Institute band. "There were so many people at the last commencement ceremony that the band had a space that was only seven feet by ten feet," laughs McLaren. "Well, we did the whole night with just synths and the IBM computer, and the response was overwhelmingly positive. The principals, superintendents, and parents couldn't believe we were creating all that music live."

Of course, McLaren encounters his share of skeptics who ask: "Isn't this destroying traditional music?" His response is simple: "Come and look at what the kids are doing. It's really adding a whole other dimension that we never could have had before. A machine like to Juno-106 is so user-friendly to kids, even my three-year-old daughter knows where the sounds of 'bubbles' and 'raindrops' are on the instrument. She calls it 'the piano that plays raindrops."

Scott Wyatt, director of the University of Illinois Experimental Music Studios, teaches music students the importance of new technologies, as well as knowing how to create analog sounds from scratch.

Brent McLaren set up a small MIDI lab, which includes a Juno-106, a TR-707 rhythm machine, a mixer, two sets of inexpensive headphones, Roland's MPU-401 Intelligent MIDI Interface, and MPS software for about $2000 (the IBM computer is on loan). "Not even the cost of a bassoon," he points out. Music majors can study composition and arranging by loading pre-existing pieces of music into the computer, experimenting with voices and voicings, and then making stereo mixes of their projects. "I never had the time before to teach composition and arranging at the high school level," he says. "Last year I had a student write a brass quintet, and he got to hear it and have the parts printed out using the MPS software. I'm seeing their ear training and compositional abilities develop very quickly, because they're having so much fun."

As soon as the Perth and District Collegiate Institute got their equiment back in January of 1984, the kids went out and purchased more equipment on their own, such as a Roland MC-202 Micro Composer, GR-700 Guitar synth, and several other units. "Then they wanted to bring it all to school, because working in the lab setup is so much more creative to them than working at home," says McLaren. "We're getting outstanding involvement not only from students enrolled in the program, but even from those who are taking other subjects in the school."

When the physics teacher gave students a choice of topics for a science project, many of them chose to investigate how synthesizers create sound. "I'm absolutely swamped," laughs McLaren. "Now we have even non-music majors writing songs and composing music on the equipment."

Guitar Instruction

Roland's introduction of the GR-707 guitar synthesizer opened up the world of MIDI to guitar players. Two professors who immediately recognized the potential for education are Jerry King at Kennesaw College in Marietta, Georgia, and Paul La Rose, assistant professor of music at the University of Southern California in Los Angeles, California.

Jerry King, a jazz guitarist, teacher, and graduate of the Berklee College of Music, recently joined Kennesaw's newly formed music department. King wants to institute an active, contemporary guitar program that the college can export to the rest of Georgia. His only obstacle is a definite lack of suitable guitar compositions. "A music department is only as strong as its library, and here is where the MPS program comes in," he explains. "Hopefully, the MPS program will help us pack this library with guitar music. All we have to do is play original guitar pieces into the computers, and print them out so people can work with them."

Paul La Rose wants to pursue a slightly different direction. According to La Rose, the emphasis at USC is shifting more and more toward developing serious research programs. With this in mind, he's submitted a grant proposal to Projects on Innovative Teaching, which would provide his department with five controllers, five MPS programs and a one Sony video projector and eight-inch screen. "Usually they get approached by people in the engineering, or science or computer departments," he says, "but I presented this concept for research in the field of music."

La Rose plans to use MPS software in his improvisation and performance classes. Because MPS has the ability for printing out music, students will be able to improvise parts or play homework assignments in class on a GR-707 guitar controller, and have the computer print them out for study and analysis during class. "Improvisational analysis has always been done using memory or a recording, or studying transcriptions of great solos by players like Charlie Parker, John Coltrane, or Miles Davis. Now, MPS should give us the ability to look at a student's solo, while it's fresh in his head by either putting it right on the 8 inch monitor screen or printing it out."

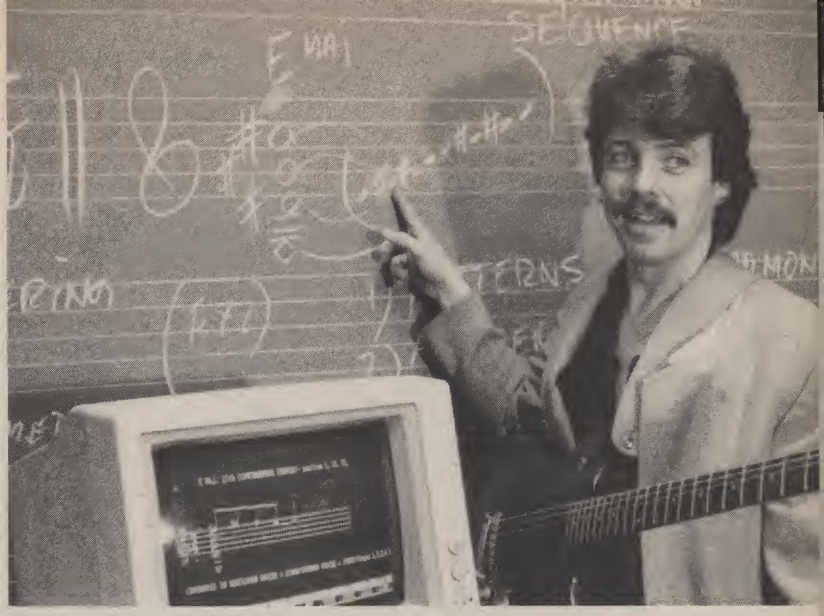
Conservatory-Type Programs

Even though the California State University at Northridge (CSUN) offers a wide range of subjects in math, applied and social sciences, the music department is well respected in its own right. "The school thinks of itself as a conservatory, and teaches what's called Art Music Composition," explains Mark Waldrep, co-director of the electronic music lab.

Most of the activity at CSUN revolves around two studios. One is the Computer Music Studio which houses a Fairlight CMI digital sampling synth. The other, called the Analog Studio, acts as the training ground for some of the more commercially minded students and especially composition majors, who are required to do a year's worth of work with analog synths. According to Waldrep, Roland's modular 100M Studio Synthesizer which he uses in this studio is excellent for teaching the basics of tone synthesis. "The best feature of a modular synth is that students have to program it to get a sound out of it. I encourage them to plug anything into anything, and see what happens, and you know, after a year, they tend to stay away from the pre-set equipment and go for the modular equipment. For me, the Roland stuff will not go out of fashion any time soon."

The University of Illinois has gained world-wide recognition as the oldest electronic music program in the western hemisphere (started in 1985), as well as the largest (seventeen full-time composers, eight studios, and 132 students all going eighteen hours a day). "This is a purist school with a conservatory atmosphere, so the emphasis is definitely on new music in the contemporary classical vein," explains Scott Wyatt, associate professor in composition and director of the experimental music studios.

Along with their very expensive Buchla 200 Series synthesizer and various Moog modules, UI's Studio A contains a Roland 100M Analog System and a Roland MC-4B Micro Composer. Even though the faculty and students tend to stay away from pre-programmed synthesizers, Wyatt felt these types of instruments served a very important purpose in the overall story of electronic music. "The pre-programmed synths are easy to use, so they provide an opportunity for more people to come in contact with electronic keyboards and the music they are capable of producing. In the long run, I believe there will be more musicians who want to create their own sounds from scratch. Actually, I think we'll see the development of synths come full circle. The first synths were modular; now there's a strong interest in pre-programmed models. Eventually I think we'll see a renewed interest in modular, programmable units again, but on a very sophisticated level using new technologies."



At the University of Southern California in Los Angeles, music professor Paul La Rose uses Roland's MPS software with the GR System as an invaluable teaching tool in his improvisation and performance classes.

With the advent of the new music technology, everyone is sharing in a discovery process...

San Jose State University

Bridging the gap between the experimental/conservatory-style approach to the use of synthesis and a commercial music school philosophy is San Jose State University's B.A. and M.A. programs in music. To augment the effectiveness of courses in electronic music, digital synthesis, recording and production, the school maintains three studios: A full multitrack recording studio and control room; an electronic music studio, which houses several computers and has a resident in-house programming language called MASX; and a smaller third studio for student practice and production, which has more synthesizers, an Apple computer which runs Roland's MUSE software, a twelve by eight console, and multitrack tape recorders. "The Apple and MUSE software is reserved specifically for the keyboard class, " says professor of music Dan Wyman, "and it's the primary vehicle by which the students work on projects."

The third studio is set up for use by individual students who want to work in a disc/multitrack format. The proliferation of MIDI synths allows students to experiment with multitimbral layering, and thereby become more familiar with the concepts of orchestration. "The Apple and the ability to do multitimbral recording is one thing that has completely changed our teaching methods." says Wyatt. "The Studio Orchestra course is a small studio-oriented ensemble of no more than twenty people that almost always has at least four keyboard players with multiple sythesizers. This orchestra plays exclusively music written by students in film scoring, jazz arranging and composition, so it's not unusual for someone to come in with tracks already on tape. The tracks are partially scored via MUSE, played back in real time, and accompanied by the musicians, who stay in time via a click track in their headphones. San Jose state also has a Roland modular 100M synth, essentially for the same reason as the conservatory schools, teaching the fundamentals of building voices. "There's nothing like a modular, analog system as a teaching tool," says Wyatt. "Plus, the analog system can be used in any number of ways for acoustic recording, and it's only with an analog system that you can get to the filters. We even use it to supply clicks and output triggers for compression, expansion and gating in the recording process."

Fresno City College

Fresno City College's new Roland Teaching Lab has just been installed, and associate professor Elizabeth Bennett-Gress expects about 90 percent of her students to be non-music majors (adults and college students playing for fun or humanities credits). The physical setup includes twenty-four student pianos and one master piano for her. Trying them together are two control panels with one acting as the master and the other the slave unit.

Gress's approach to teaching requires that the students learn several duets as well as solo pieces, even in the beginning class. The fixed arrangement of the old setup demanded that every six pianos be specific group, designated A, B, C, and D, respectively. Because only certain combinations of keyboards were possible, students usually had to change seats if they wanted to play with someone outside their group. Now, students can sit anywhere they want to, and the control panels do all the switching work. "I can split the room into groups and assign any piano with any other piano in the

Lorenz Rychner, director of the synthesizer program at the Grove School of Music in Studio City, California, relies on the Juno-106 to help students gain a strong foundation in the basic concepts of synthesis.

The range of projected applications and the results paint an optimistic picture of exciting musical programs...

room for duet work. I have individual communication as well as group communication with any number of students, and I can choose any one student to use as a demo through the headphones or the main speaker system in the front of the room."

Grove School of Music

The Grove School of Music in Studio City, California, offers a one-year intensive program in electronic synthesis. Like Fresno, they have a Roland Teaching Lab setup, but the classes are kept half the size–twelve Juno-106s with one Teaching Lab mixing module.

Lorenz Rychner, director of the synthesizer program, feels the teaching lab is the most efficient way to teach in a class situation. Full-time students spend the first three months concentrating on learning the Juno-106, which lays the groundwork for all the analog synths and prepares students for their studies with other types of synthesis. "Once they get the hang of the Juno-106, it's very easy to go on to the other ones," says Rychner. "The Juno is the bread and butter synth that is part of every project they do."

In a teaching situation, Rychner seldom uses the microphone talkback system built into the teaching lab console because the classes are a comfortable size. Generally, he'll play a student's channel through the speakers in the room so everyone can hear the particular sound the student is working on. In a lab situation, several students may be linked via a MIDI sequencer, so all of them may be played back at one time. "The system is really quite versatile," says Rychner. "When we study orchestration techniques, I play them examples of scores from classical literature, which we then discuss in terms of how to build a particular sound, how to articulate the sound for different effects, and what the orchestrator was trying to achieve when he chose a certain voicing."

Brian Vigo, one of Rychner's students, thinks the Teaching Lab setup is a very natural way to learn. "I feel like I'm getting a good preparation for the real world. One of our last projects was to do a couple of sixty-second commercials, where we had only a limited amount of time to program the equipment and develop our ideas. We also get a lot of hands-on performance exercises, where we learn how to program by listening to orchestras."

Mary Patrao, another of Rychner's students, is a songwriter with an eight-track studio at home. "I was schooled in classical, but that kind of training doesn't deal with the reality. I want to know how to

Now, for relatively low cost, educators have access to the power and flexibility of high-quality computer-based tools...

Music students practice individually through headphones in the piano lab at the Grove School of Music.

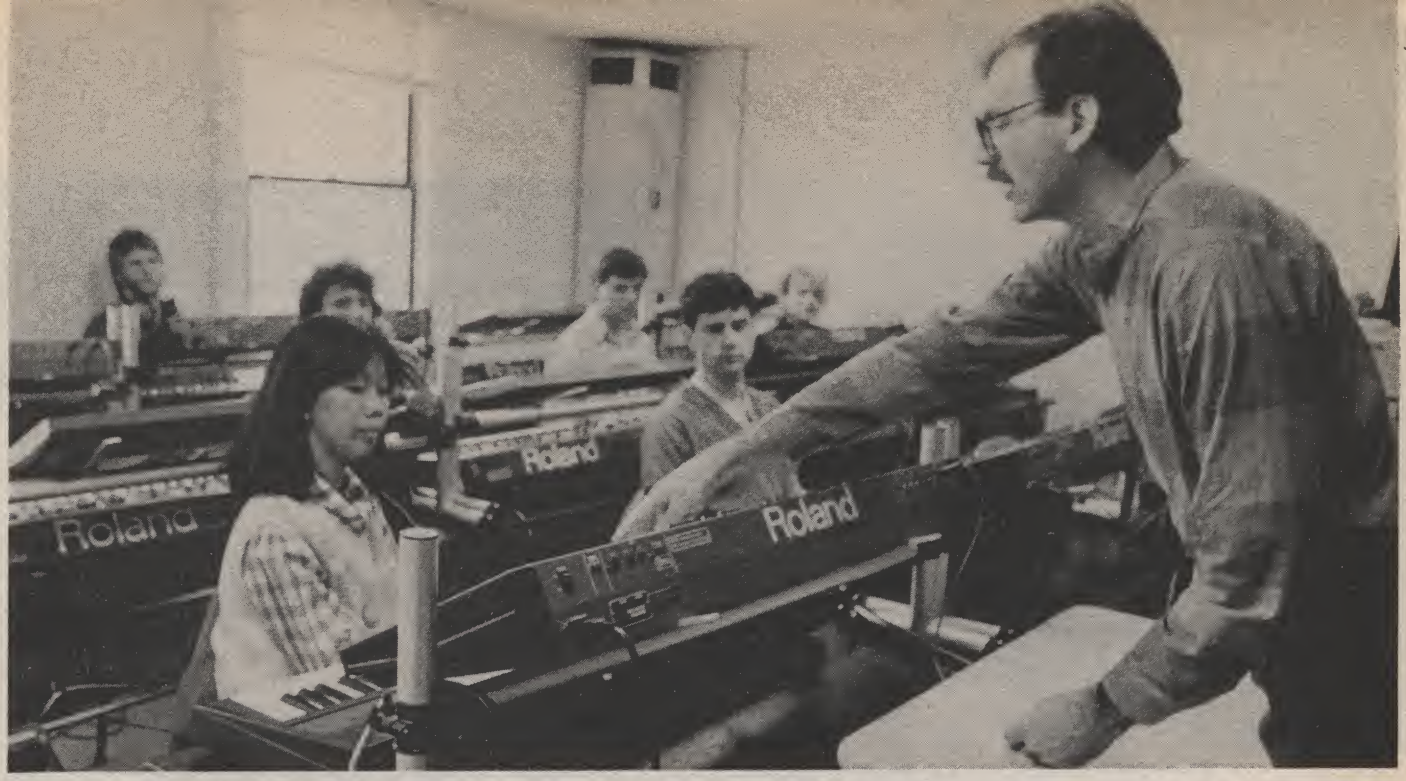
play in a commercially-oriented manner; basically to gain a skill and not a lot of mental knowledge."

Berklee College of Music

Berklee offers a full, four-year accredited degree program in music synthesis. The pilot program started almost two years ago (September 1984) and to date, enrollment is 323 students, with no more than twelve students to a class. All totaled, students have access to five synthesizer facilities. The first room (just opened in September of 1985) consists of twelve student stations, with two synthesizers involving a variety of technologies at each station. This is where students are given instruction about the basics of analog and digital synthesis, basic performance techniques for real-time performance, the basics of MIDI and how to set up systems for composition and performance. "I'd say we have about twenty-six pieces of Roland hardware in there, including Juno-106s, Jupiter 6s, MSQ-700s, and TR-909s as well as the Roland Teaching Lab system," says David Mash, chairman of the music synthesis department. "Whenever the students are in class, they have a synth in front of them, so it's always hands-on."

Using headphones, the teacher can play taped examples or songs for students, monitoring their progress, and give them instructions, hints, or critiques on an individual basis through the talkback headphone system. When a student does something interesting, he or she can demonstrate for all the other students by playing through the monitor speakers at the front of the room.

Two other rooms, dedicated to ensemble performance, each have four synths along with a twelve-channel P.A. system, electronic drums, and a series of guitar and bass amplifiers. The rooms are



Joji Sawa

At the renown Berklee College of Music, students can pursue a four-year degree program in music synthesis under the tutelege of David Mash.

open from nine in the morning to six in the evening every day, so ensembles of students can apply what they're learning in the lab to their performance experience with other instruments. "Both of these two rooms are tied to their own twenty-four-track studio," says Mash. "After students do their programming of sounds and sequences in the lab, they can take their data on cassettes to the ensemble rooms, load up there, do their rehearsing with other musicians and record directly to 24-track tape without having to move equipment."

"Berklee is very hands-on oriented," says Dan Karns, a junior majoring in music synthesis. "We'll talk about a concept and then immediately power-up a machine and check it out." "You can get as much out of the program as you want," adds sophomore Kerwin Cain. "You're guaranteed two hours of time in the lab working with the equipment, and you can come in just about anytime for extra practice. I think the teaching lab setup is about the best way to get direct feedback."

Public Access Synthesizer Studio (PASS)

As its name says, PASS is a Public Access Synthesizer Studio in New York City and according to Howard Massey, the facility's project director, it's the only non-profit electronic audio arts studio in the country offering adult education progams in electronic music synthesis. PASS is supported primarily by New York State Council for the Arts and the National Endowment for the Arts.

PASS regularly schedules weekly programs on a variety of synthesizer topics, and features a one-day intensive MIDI seminar with guest speakers on the second Saturday of every month which are open to anyone who's interested. (Ed Note: Roland is booked in for May of 1986.) They also maintain a fully trained staff to give private lessons on specific pieces of equipment. Massey explains the setup this way: "You can book our facility a day in advance and use the equipment by the hour. (This includes a Roland MKB-300 MIDI Keyboard Controller, a Super Jupiter with Programmer, a SBX-80 Sync Box, and an Apple with Roland's MUSE sequencing program.) We have an eight-track studio where people do demos, commercials, and soundtracks as well as arts-related work. One of the nicest features is that musicians can try out our equipment without the pressure to buy that they might get in a music store." (Ed. note: PASS also publishes an audio cassette magazine called Tellus. For more information, write to PASS, 16 West 22nd St., Room 902, New York City, NY 10010)

The Coda

Certainly, music education is in the midst of a revolution. And with change comes the inevitable discomfort of growth and the uncertainty of the result. The support and encouragement that schools and music teachers must receive from you in their implementation of the new music technology will be crucial in determining the future course of music education in America. "Many critics are. . .concerned that technology will take the human interaction out of education, isolating people from one another," *Megatrends* author John Naisbitt observes, but he doesn't agree with that assessment. "Educational technology will allow classroom teachers to concentrate on less tangible, critical skills such as thinking, reasoning, and basic communications. . .we will use technology as a tool to free teachers and administrators from some of the more mundane tasks of education. . .teachers will have more time for creativity. . .expect to see a resurgence of interest in teaching art, music, literature and drama." (Quoted from The Naisbitt Group. *The Year Ahead*. New York: AMACOM, American Management Association, 1984.)

So far, his forecast is looking pretty accurate. It's just too bad that every revolution can't be this much fun.

If you're interested in discovering new ways to utilize MIDI music technology in your school programs or in private instruction, or if you are already implementing the new music technology as part of your curriculum, let us know! Become part of Roland's database of music educators. If you're looking for ideas on how to get started or people to act as a resource for your efforts, let us help! Contact Nancy Kewin, Roland Director of Communications and Education, 7200 Dominion Circle, Los Angeles, CA 90040.

COMPOSER AND TEACHER

GEORGE SHAW

MAKING WAVES WITH MIDI

by Clay Lord

An independent record producer and computer-assisted recording artist. A community college music professor. A studio trumpet and keyboard player. All of these together correctly describe one man: George Shaw. Since moving to the Los Angeles area in 1978 to embark on a career as a studio session player, George Shaw has enjoyed a varied career in music, though currently he is involved on a day-to-day basis with almost every facet of the industry except being a studio musician.

An educational innovator, Shaw has been instrumental in developing a exceptional program of musical education at Long Beach California City College which eschews traditional methods, and gives students the opportunity to function as working professional musicians. Together with his recently released album entitled *Flight 2201* (on the Palo Alto TBA label), featuring Shaw's unique style of "influenced composition," and his production company, Century 22 Productions, which is going strong, Shaw is heavily involved in nurturing and recording both new and established musicians.

What used to be a small garage has been transformed by Shaw into the control center for all this creative activity, a MIDI-based twenty-four track recording studio. The space itself (about six by twelve feet) is incredibly compact and lined with an arsenal of computers, tape recorders, and mixing board, in addition to being packed with a variety of Roland equipment which Shaw has used over the years.

"What I have is what I call a working MIDI environment, and as you can see, you don't need a whole lot of space," explains Shaw, emphasizing the small size of the room with a sweep of his hand.

Photos by Shawn Johnson

"The new music technology now allows us to pack a lot of power into small environments. I started like everyone else, with a four-track living room studio." Then, inevitably, the living room got too cramped to allow much "living" to take place, and Shaw found himself one weekend beginning the conversion of the garage.

"My studio evolved as technology evolved. I'm a product of the MIDI era, growing up with MIDI, unlike a lot of artists and producers who have had to make changes from the older ways of recording in a primarily acoustic environment. MIDI came along just in time for me. Even in this small studio, with MIDI and room simulation effects processing, you can create the wonderful illusion that the music was recorded in one of those gigantic studios in Hollywood or New York."

"I'm a product of the MIDI era, growing up with MIDI, unlike a lot of artists and producers who have had to make changes from the older ways of recording in a primarily acoustic environment. MIDI came along just in time for me."

Clearly Shaw is an unabashed and very vocal supporter of MIDI. It meets all of his most important needs–it's versatile, affordable, compact. "I hear people talk about the shortcomings of MIDI, and what MIDI won't do. I'm so thrilled with what MIDI will do that I haven't had a chance to check out what it won't do." With the conviction of someone sensitive to the evolution of musical technology, Shaw insists that thinking of an isolated synthesizer as "the instrument" is becoming less and less realistic: The instrument has become the MIDI system.

For use in his producing, composing and recording activities, Shaw has an impressive array of electronics, including Roland's MSQ-700 sequencer, the MKS-80 Super Jupiter and Programmer, the MKS-30 Planet S, a Juno-106, with MM-4 MIDI Thru Box and MPU-401 Intelligent MIDI Interface. Also receiving heavy use in Shaw's studio are a PAD-8 Octapad and two SDE-3000 Digital Delays. On hand for mixing applications are the SRV-2000 Digital Reverb and a BOSS BX-800 eight-channel Stereo Mixer. Another piece of equipment Shaw is finding most exciting to use is his Apple IIe computer and Roland's MUSE software.

"MUSE allows you to do jigsaw puzzels with the music, to pick out a particular measure in a song and fine tune every aspect of it. This becomes very, very important when you're talking experimental composition, and especially for what I like to call the three-minute, forty-five-second art form, the radio format for hit songs. You can cut, you can paste, you can edit an entire composition. As a tool in the creative process, MUSE lets you do everything you would need to do with a piece of musical information." Shaw is also enthusiastic about the simple solution MUSE provides to the problem of memory storage; dumping musical data onto a floppy disk is not only much easier than storing the same information on tape, it's also much less expensive.

Shaw has had numerous opportunities to stretch his studio's hardware and software to their limits, particularly while recording his recently released album, *Flight 2201*. Soon after its release, this first album of Shaw's own music shot to number 54 on Billboard's "Hot Black Albums" chart earlier this year. Much of the material on the album would be categorized by most musical authorities as jazz, yet Shaw resists such categorization, preferring to describe his work as "influenced composition." Influenced? By whom?

"I'm influenced by the whole world of music," says Shaw "I could name some names, but. . ." With this album, Shaw has directly addressed a common criticism of most computer-controlled music, that it lacks the human touch. Often this type of music has what Shaw calls "a computer vibe" and will sound too much like the product of one musician, or in this case, one programmer. To circumvent this, Shaw brought a number of top session men into his studio to overdub acoustic tracks along with the synthesized parts, thereby integrating the influences of other musicians into the music. Musicians listed in *Flight 2201*'s credits include Wilton Felder of the Crusaders, along with Shaw's on-going collaborators: master percussionist Michael Adams, guitarist Frank Potenza, saxophonist Damon Rentie, and drummer Stanley Smith. When pressed, Shaw cites these musicians as some of his biggest influences, and presumably the influence cuts both ways.

Two tracks off the album have received the lion's share of air play, although they are not the cuts Shaw himself would have selected as the album's choicest. Curiously enough, they are both songs he wrote for family members. "Jasmine" was written with his two-year-old daughter in mind, while "Theme for Diane," a ballad reminiscent of the style of Chuck Mangione, is named for Shaw's wife of ten years.

Growing up in Enterprise, Alabama, a city in the southern part of the state, Shaw was always musically inclined. An early musical memory is of trumpet players from the local high school coming to play in his church. This man's determination to succeed in the world of music was not born of a conscious decision however: Shaw admits that he never really discovered any other career choice "that made sense" for him.

In 1967, leaving Enterprise behind for Montgomery, Shaw entered the undergraduate music program at Alabama State University. Professors there encouraged him to go on and get a postgraduate degree. He went on to earn two more degrees in music, a master's from Wayne State University in Michigan and a doctorate from the University of Oklahoma.

It was while at the University of Oklahoma that Shaw met Bobby Bryant, a top studio trumpet player who was putting in an appearance at the university's annual National Trumpet Symposium. A trumpet student himself, Shaw was assigned to drive Bryant around during his stay, and by the conclusion of the symposium, Bryant had convinced Shaw to make the move to Los Angeles immediately upon finishing up his doctoral studies to pursue the life of a studio trumpet player.

As it turned out, life as a session player in California wasn't all sunshine. Los Angeles was filled to overflowing with top trumpet players like Bobby Bryant, and the best dates were given to a select few. Shaw could only wait on the sidelines and take up the work that these musicians were too busy to accept. As musicians switched bands, opportunities suddenly opened up; that's how, in 1978, Shaw came to the attention of a Motown legend. "I played in Marvin Gaye's band for awhile," Shaw recalls, "and I was fortunate enough to do a couple of records with him."

But Shaw's realization that studio trumpet work was thinning out led to his learning to use synthesizers to create the sounds of trumpets and other instruments, thus augmenting his marketable music skills. At around this time Shaw found himself frequently visiting the home of a friend who owned an Apple II Plus personal computer. (Shaw liked to play the computer games!) When this friend upgraded to an Apple IIe, he gave Shaw his old Apple, and Shaw began to get serious about acknowledging the potential value of computers to his music and career.

"Four or five computers and seventeen synthesizers later," says Shaw, laughing, "here I am."

Moving hand in hand with his performing live with bands or on session dates and his increasing knowledge of computers was Shaw's career as an educator. If his music can be termed "influenced composition," then his teaching methods can just as easily be defined as "influenced instruction." In matters of music education as well as composition, Shaw reflects a synthesis of many diverse influences.

An educational philosophy began to take shape while Shaw was conducting research for his doctoral dissertation. He obtained a grant from the University of Oklahoma that financed a unique two-year project in which Shaw traveled across the United States conducting interviews with hundreds of musicians and music educators. The people he spoke to ranged from those just starting out to those already at the top of their fields.

Such experiences that Shaw gathered before the age of thirty have made him the professor he is today. "While I was at Wayne State, I played in the nightclubs of Detroit and taught in the public schools there for two years. Before that, I had attended a predominantly black school in the South, in addition to having been on the road with bands by the time I was eighteen years old. After having taught in the inner-city schools, I took my doctorate degree from Oklahoma, which was a predominantly white school. I taught in the public school system in Norman, Oklahoma, and on top of all that, I've traveled around the country talking to all sorts of people with varying musical backgrounds."

As part of his doctoral studies, Shaw flew from city to city for two years, cassette recorder in hand, and the central question he posed to each music professional he interviewed was the same: In your opinion, how can music best be taught? After studying their answers and writing a dissertation on the subject, Shaw felt he now knew the best way to approach the teaching of music. His methods, currently employed in the Long Beach City College's music program, are unprecedented through Shaw's singularly "real world" approach and his extensive contacts in the music business.

Many schools with undergraduate programs in music employ a traditional approach, acting, in Shaw's view, as feeder systems for the major orchestras. Thus the curriculum is heavily laden with coursework in music history, theory, musicianship, and so forth. "This is not the kind of stuff that people find themselves using in the working world," says Shaw, "It's stuff that people do to pass tests."

"My classes are structured just like the real-life environment, with two or three studios for students to work in and a studio manager. Students book studio time just like they would in the real world." In addition, as part of the required curriculum for students whose studies range from engineering, to instrumental and vocal performance, to arranging and composing is a unique class instituted by Shaw called MIDI Systems.

Through an ingenious arrangement that ties the college in with the community that it serves, Shaw teaches the MIDI Systems class at an ideal off-campus site: Long Beach's Whittaker Music Store. "It's a hi-tech keyboard classroom," says Shaw of the store's MIDI room, which contains almost every MIDI device imaginable. "The store has everything organized using MIDI patchbay switching to demonstrate complete MIDI systems. A person can design a custom MIDI system right there just by patching any combination of instruments together. Music students keep their MIDI data and creative juices flowing together through the likes of Roland's MKS-80, Planet S, JX-8P, Juno-106, MKB-1000 and 300 MIDI keyboard controllers, the Axis remote MIDI keyboard, TR-707 and 727 drum machines, SBX-80 sync box, and new alpha Junos 1 and 2, and more! This fully accredited course gives students direct contact with the latest MIDI gear and the opportunity to learn exactly how it works from those who know, the various manufacturers' representatives invited by Shaw to the class as guest speakers.

Shaw's is a very functional, hands-on program, and one of its cornerstones is contact with working professionals, who provide a standard against which each student can measure his own progress and set his own goals. "How do you prepare a student to become a studio musician, an engineer, or a producer? One of the first things I do is to have one of my friends come to class. 'So you want to be session players?' I ask my students. 'Well, I've arranged for Ernie Watts to be on campus in two weeks, and he's done more session work than anyone in town. He's going to bring his band, so if you want to hear about what session guys do, you come talk with him.' " The cream of the contemporary players have visited Shaw's classes to inspire and educate his students. The roster of musical luminaries has included the likes of Lionel Hampton, Nancy Wilson, Ronnie Laws, Clark Terry, Dizzy Gillespie, Wilton Felder, Joe Sample, Patrice Rushen, David Sanborn, and Tom Scott. More often than not, Shaw organizes these visits so his students take their places as part of the performing band, playing the guest artist's own compositions right along with the master. The students emerge with a very clear picture of their current playing abilities in a real-life situation, under the kind of conditions they will face in a typical audition.

This approach has yielded fantastic results. Interest in the school's music program, as reflected by ever-growing enrollment records, has sky-rocketed, and many of Shaw's former students have gone on to become working professionals themselves. "And I can remember when these guys couldn't even take their instruments out of the cases," Shaw recalls. "That's rewarding."

Shaw realizes that not every music teacher can expect to pick up the phone and schedule Dizzy Gillespie and his band to come in and work with the students. But his experience suggests that every music educator and his or her students will benefit from a movement to make music programs more practical.

With the strong belief that the use of synthesizers and other electronic music equipment should not be limited to the secondary levels of music education, Shaw went to his daughter's preschool class, bringing in synthesizers and drum machines for in-class demonstrations. The electronics demo was a big hit. "Twenty little four-year olds, how do they react to this equipment? You'd be surprised." Free from the hang-ups and fears many adults experience when faced with new technology, these kids reacted with active excitment, anxious to touch the equipment, enthralled by the ability to create the same types of sounds they've grown accustomed to hearing on Saturday-morning cartoons programs. The Roland drum machine proved to be the biggest hit with these littlest of fledgling musicians. Shaw found the drum unit especially effective in teaching rhythms to this age group, asking them to imitate rhythms in call-and-response fashion by playing them on the drum machine.

"You never pass up an opportunity to teach somebody something. You never pass up an opportunity to watch a light go on. No matter how dim the light is, no matter how insignificant it may be to you, it's not insignificant to the person who's being turned on."

In an effort to turn on more lights more rapidly, Shaw is developing a set of educational materials; he painstakingly enters data he has assembled in his research into the Macintosh computer he uses at home. He hopes that educators will be able to use these materials to reorient their existing music programs. Eventually he hopes to distribute materials in both floppy disk and paper forms, but Shaw sees the music education community's most glaring need to be one

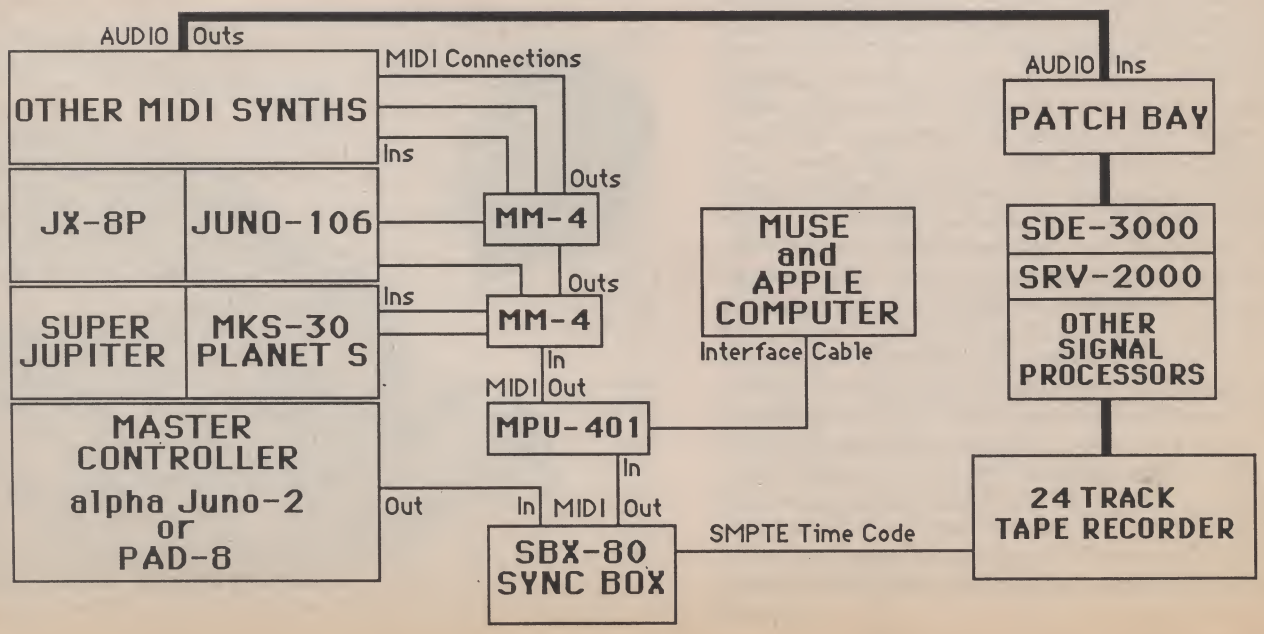
for printed materials outlining how to implement the "new music environment," an environment that allows students to function as working musicians do.

Along with this effort, the relationship Shaw has established with his present record label, Palo Alto TBA, is becoming increasingly important in his musical life. Based in Northern California, Palo Alto TBA was an up-and-coming label that came to prominence with the success of a release by sax player George Howard, which reached the top of the Jazz charts. High-energy Jazz trumpet player Maynard Ferguson is another top-flight musician affiliated with the label. Century 22 Productions (which had its origins as a joint songwriting venture by Shaw and long-time friend and percussionist Michael Adams) has put Shaw's Palo Alto TBA connection to good use. In addition to releasing Shaw's own *Flight 2201*, the label has gotten behind two Shaw-produced albums. One is a solo album by guitarist Frank Potenza, who was signed to the label on the strength of his fine work on Shaw's recording. The second album is by a group of musicians calling themselves Jet Stream, showcasing the talents of Grover Washington-style sax player Alvin Hayes and Maurice Love, another composer of computer-assisted music. With Palo Alto TBA, Shaw is "able to make records and be guaranteed that those records are going to get on the street, going to get on the radio. . .That's what all musicians are striving to do. To get to the point where their music will be on the radio and in the stores."

Shaw is an avid prognosticator on the future of computer-assisted music. Not surprisingly, he predicts that a lot more computer-controlling musicians will come on the scene. These artists will be able to play many different kinds of music due to the versatility of synthesizers. Such musicians whom Shaw mentions as favorites include British synthophile Howard Jones, keyboard session man extraordinaire Mike Boddicker, urban techno-funksters The System, as well as Dean Gant (who contributed heavily to the sound of Madonna's first album) and Benjamin Wright (previous musical director for the Temptations and Gladys Knight and the Pips, he created those sweeping string arrangements on Michael Jackson's hit "Don't Stop 'til You Get Enough").

And what of Shaw's future? He'll continue to write songs, both for himself and for other artists. (One of his compositions was very recently recorded by Wilton Felder for his soon-to-be-released solo album on MCA Records.) Committed in his efforts to improve the educational outlook for music students at all levels, Shaw is looking to the future of computer-assisted musicianship, and he's excited about the possibilities.

"We aren't just talking little bitty ripples here," Shaw says with characteristic enthusiasm. "We're talking major waves."



An exchange of hard facts, practical applications, and helpful tips for MIDI users.

by Freff

As computers have become less and less a thing of the future, and are more and more a thing of the present, musicians are discovering a whole new world of power, flexibility, and possibility. Musicians are also learning to speak the jargon of the computer trade. Bits, bytes, floppies, CPUs, ports, peripherals and so on are now being discussed at the gig just as they are in computer labs. Many musicians are now investing their time and money in assembling MIDI studio systems with a microcomputer as one of the key elements. And since a musician's primary goal is to make sounds, it's the MIDI instruments that comprise the real heart of such a system, and not the computer. Though it can serve many purposes in a MIDI studio system, as we shall see, for musicians the computer is really a peripheral to the main attraction, which is the sound gear.

If you have prejudices against computers, put those fears and misgivings aside. All you synth players and drum machine programmers are already using computers, little ones called microprocessors which are the engines that make your musical machines come alive. Considering what a nifty job those little micros are doing for you, why not go for the whole package and add the power that a personal computer and MIDI music software has to offer?

Are there any drawbacks, you ask? Let's see. For one thing, a computer costs money. (But so does any other musical instrument.) A computer takes up space. (But so does any other musical instrument.) A computer is one more thing to learn to operate. (But so...well, you get the point.)

Now here are four big advantages, and you can judge for yourself how they stack up: (1) Music Sequencing software, (2) Instrument Voice Library software, (3) Instrument Voice Editing software,and (4) Music Notation and Printing software!

Sequencing Software

MIDI sequencing software is slightly misnamed. It has less to do with the steady, unchanging patterns associated with early sequencers than it does with an even older invention, the recording/player piano. In that instrument, mechanical devices recorded onto some kind of medium (usually punched paper tape) a detailed record of what keys were played, as well as how hard and fast they were pressed. Upon playback, a different set of mechanical links actually threw the keys around, following the tape's command, recreating a command performance as it might have been played by the Invisible Man.

But whereas the old player pianos only recorded and played the notes of a song, MIDI can transmit and receive an incredible amount of performance information besides note-on/note-off commands. MIDI can describe which note is played, how fast it is struck, how hard it is pressed, when it is pressed, if it has vibrato or a pitch bend, how to syncronize one sequencer with another, and can even transmit an instrument's patch setting. And MIDI is not limited to keyboards. MIDI is giving new creative potential to guitarists, drummers, bass players, woodwind players, even singers! By building up a system of MIDI synths, MIDI drum machines, and MIDI signal processing devices, then assigning each to respond to a different MIDI channel, a computer can easily put orchestral effects and complex scoring at your disposal.

In order to connect your battery of instruments to your computer, you will need some kind of hardware connection to interface them together. You will want to choose this carefully. First of all, a software sequencer may only operate with a certain MIDI interface. It is important to get the interface that works with the sequencer you want. Secondly, it is important to have an interface that can assist in the process of recording and playing back all the MIDI data you may want to muster, as this could overload any computer's capabilities if a very demanding situation arises. Roland developed the MPU-401 Intelligent MIDI interface with these considerations in mind. The MPU-401 contains its own computer system which does a great number of things to keep everything flowing smoothly from MIDI to computer and back again. I also makes chores like clocking, syncing, and tape sync very automatic. This means your computer will be much freer to do other necessary chores, like its internal housekeeping or keeping the screen updated, without skipping a beat.

Software packages can take full advantage of all that MIDI has to offer. The more powerful ones, such as Roland's MUSE (for Apple IIe and II Plus) and MPS (for IBM PCs and compatibles), offer editing control so great it redefines the relationship between music and musician. There's overdubbing, quantizing (also called Auto Correction) which can be used to tighten up loose time; transposition, for quickly harmonized parts or key changes; looping, punching in, MIDI filtering and channelizing, and cut-and-paste techniques that let you restructure your music in any way you might imagine. For example, with MPS, if a note is too short, change it! This C over here should have been a C-sharp? Change it! The take was pefect except the tempo dragged a little? Change It! A lot of this can be done with any sequencer, such as hardware-based ones like Roland's MSQ-700, MSQ-100, or new MC-500. But add the greater memory possible in a computer (some are capable of storing entire symphonies) and the advantage of a big monitor screen with graphics instead of a tiny LCD display, and its a whole other ball game.

A computer system with good sequencer software lets you work with music as if it were sculpture, which is wonderful. It gives you capabilites comparable to and beyond that of a multitrack recording studio, even if you only have a modest amount of equipment. In addition, the sync-to-tape capacity of powerful sequencer programs, (using the highly accurate FSK signal out of the Roland MPU-401) even lets you change things after they've already gone down on tape. So long as a track of time code was laid down first, and the sequencer and tape recordings made together, you can change your mind about a MIDI instrument part any time, in any way, and make it right. (It can also save your hide even when the performance is perfect: More than once in my studio I've synced the computer sequencer to tape and simply played the same line in on top of the old one, after adjusting the EQ or the level or whatever else had gone wrong the first time. "Fixing it in the mix" is no longer slang meaning, "We'll do the best with it we can.")

If that isn't enough for you, consider another trick that sync-to-tape makes possible, which is to expand the number of tracks you've got. Since one track of time code can control many live tracks of synthesizers, you are free to use your tape for acoustic music and let the sequencer drive everything else. Great stuff, for those of us with eight-track equipment and twenty-four-track imaginations.

Software sequencers can also expand the power of some MIDI devices. For example, Roland's TR-707, TR-727 or TR-505 rhythm

composers will respond to the 127 different MIDI dynamic levels when patterns are sent to them via MIDI commands in a sequence recorded using a MIDI keyboard with velocity sensitivity. If you want to take the time, you can craft drum parts with more "feel" than you thought a drum machine could ever have. It's possible to create wonderful sequences of drum parts with devices such as Roland's PAD-8 Octapad or PD-10/PD-20 Drum Pads with the DDR-30 Digital Drum module connected to a sequencer. The cut-and-paste editing feature of MUSE and MPS allows you to arrange these drum parts in a song just as easily as you could on the drum machine itself.

Voice Library and Editing Software

Voice librarian software packages open up a whole new world of designer sounds (for any player) and money-making (for people who are good sound programmers). Need thirty new string patches? Just order a set and start to wail. Got a synth full of hot patches but need to put them into a different order? Just transfer that data to your computer and move theindividual patches around any way you want.

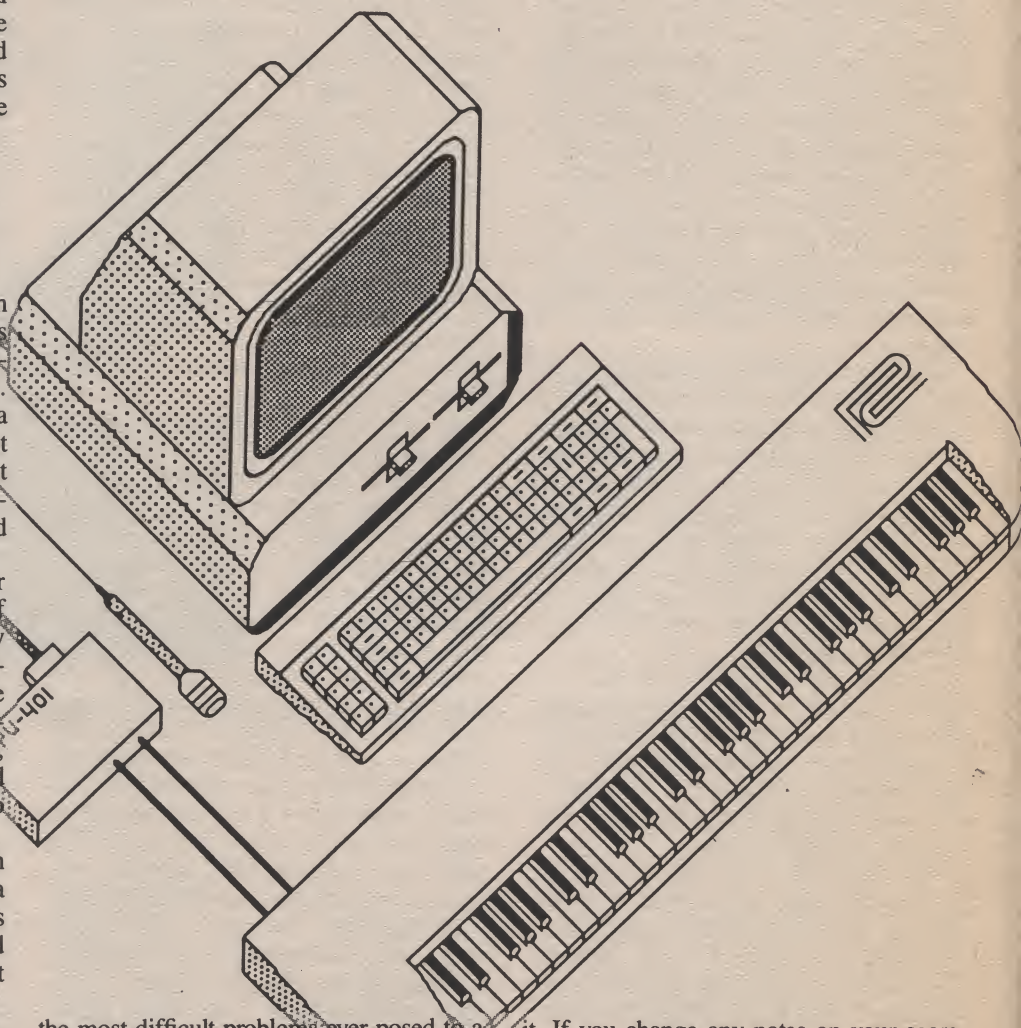
This is money-saving software as well, for anyone interested in having a big library of sounds. A synthesizer RAM cartridge only stores a few dozen sounds, and costs anywhere from $50 to $125. By contrast a single floppy disk can store, depending on the computer and program, as many as 1,000 voices, and buying enough RAM cartridges to hold all that could cost you more than buying two or three complete computers!

The soon to be released Roland Session Saver software for the IBM PC can be a lifesaver for the multiple synth owner. This program lets you save, document, and reload patches from virtually any MIDI instrument (even the ones from those other guys).

As synths become more and more powerful, it also can become more challenging to create sounds on them. And the sounds are the soul of any instrument. Voice editing software puts things right up on the computer screen, where you can easily understand what is happening and take advantage of it. For example, Roland's SJE (Super Jupiter Editor) software for IBM PCs allows you to both create and edit sounds for the Roland MKS-80 Super Jupiter, as well as organize them and save them to disk. And all in one package.

Notation Software

Here's the future. Play your music however you like, and then let the computer handle the messy, tedious chore of analyzing and notation. You'll find it in Roland's MPS. Creating musical notation is perhaps one of the most difficult problems ever posed to a microcomputer (and I'm not restricting myself to the realm of music when I say that). But it has begun–and continues as hardware and software push each other forward in a steady cycle of improvement. Right now MPS enables you take a track you have recorded in the sequencer and display it on the screen of the computer. Every note is there just as you played it, but since the computer can't always know exactly every rhythm you had intended, MPS doesn't provide you with the beams, ties, or rests. It gives you the flexibility to put these in yourself using the keys of the computer, completing the job exactly the way you want it to appear. This provides a wonderful system for correcting any mistakes you might have made, or for changing your mind about a note or passage without needing to re-record it. If you change any notes on your score, you will hear these changes immediately upon playback. Any changes you make to the music are reflected throughout the program. The various functions of sequencing, editing, and scoring all work interactively and give MPS its true power. When all your changes are completed, it's simple to arrange your score on the page and send it to another peripheral, your dot matrix printer (MIDI not required for this one, folks).



The Big Question: Which computer to buy?

There are three main guidelines that count when purchasing a computer as a music peripheral, and one extra tip for peace of mind.

Pick your software first. Get to know what's out there–what it does, how it does it–and find the package or packages best suited to you. It's the software that you will actually be using. The computer itself is just a trained technological monkey that runs the program, and it will be no better (or no worse) than that program lets it be. Once you've found the software of your dreams, you'll know which computer you have to buy. Realize that no software package will do everything just the way you want. Software is what gives the computer its personality, and you will be spending a lot of time with it. Make sure your computer is someone you want to be with a lot.

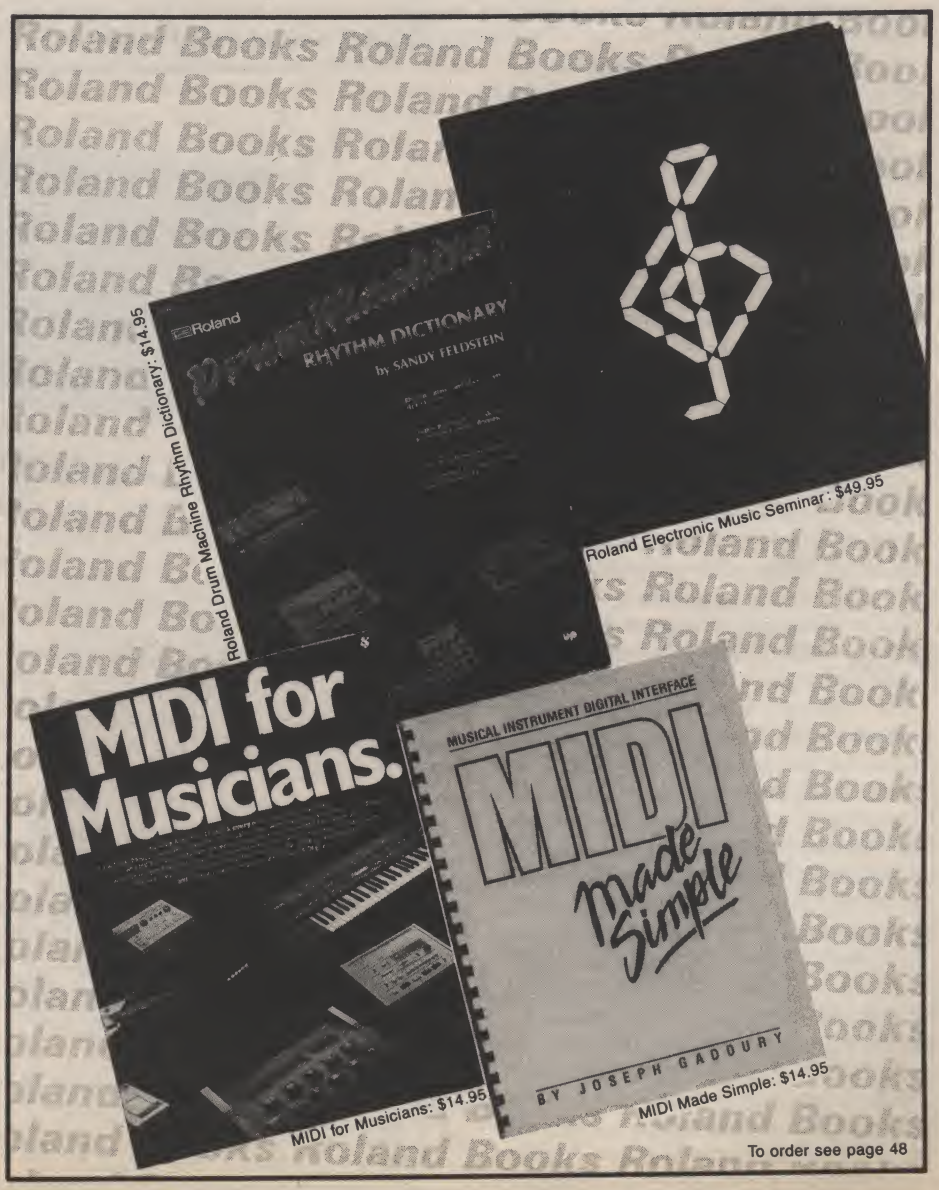
Second, go for as much memory and computer power as your budget will let you grab. As you might guess, more memory usually means more bucks. You can never have too much memory. Trust me.

Third, buy your computer when you finally need it enough to justify laying out enough bucks to get what you want. Buy neither sooner nor later. Sooner will get you stuff that isn't what you need; later will mean you lost time you could have been creating. Don't worry about obsolesence, or the fact that (very likely) anything you buy may be less expensive six months later. It is a fact of the world that anything you can actually buy is either obsolete or experimental, so just go for it and enjoy. Sooner or later you've got to take the plunge, right?

Which leads to my tip. You may want more than one computer. And why not? Precious few of you have just one synth, or one guitar, or one effects box, because you know they are all a little different and useful in their own ways. It's exactly the same with computers. Besides, it's awfully useful to have more than one computer around, so you can run your sequencer and librarian programs at the same time (if that's your plan, go with a less expensive computer for the librarian work; those programs aren't as memory or processing hungry). But there might be an even better alternative if you can't see yourself getting into that big of a MIDI studio system yet.

New programs are coming onto the market which will give your computer a "split personality." They permit you to run more than one program on your machine at a time. For example, the three programs available from Roland for the IBM PC can all be running simultaneously! This means that while a sequence is playing you could open up a "window" and edit a Super Jupiter patch, or load a bank of patches to any of the synthesizers in your studio. If you decide to stick with a single computer (and your bankbook may be able to help with this decision), it is often very practical to use a dedicated, hardware sequencer like Roland's MSQ-100 in conjunction with a software sequencer. This often gives you the best of both worlds. You have the flexibility and graphic orientation of the software, with the added memory, front panel controls, and good roadability that the hardware sequencer provides.

Then, of course, there is always the future. As more gear turns MIDI on us–mixing boards, equalizers, and who knows what–I'll happily add whatever software or hardware it takes to push them to the max. Because for me, the music has got to be right to fly. And my computers give me wings.



To order see page 48

EXPANDING MIDI CONTROL WITH THE OCTAPAD

by Jim Whitmore

Man has been pounding on things in pursuit of sound for thousands and thousands of years, and the thrill just gets better! As fun as it may be to keep the beat with log drums and gourd rattles and broken branches, it's even more fun to play out from the middle of a well-arranged kit of drums or percussion instruments. The passing centuries have brought drummers a range of sounds and rhythmic possibilities that literally span the world. We've reached a point today where there's almost nothing that can't be played. A drummer's limits are becoming fewer and fewer, save those of nerve, muscle, creativity, and intention.

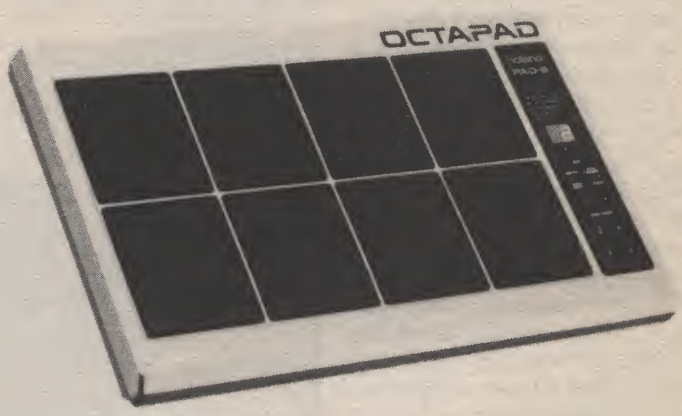
Until recently, the only limit left was the simple fact that hitting something always sounded like hitting something. And that has been accepted as an essential and unchanging reality of the drum/percussion business. New instruments and electronic devices have allowed keyboard players and guitarists to sound like virtually anything they wanted to sound like (including drummers), but drummers didn't yet have this same total freedom of orchestration.

Today, technological changes are giving birth to a whole new set of attitudes in drummers: Rhythm boxes begat digital drum machines and electronic drums; MIDI turned the entire industry on its ear; hardware and software sequencers redefined the recording process; and drummers with spark and a little spunk are finally getting their chance to fully participate in all aspects of music composition beyond the purely rhythmic. Which brings us to Roland's PAD-8 Octapad.

The Octapad is a MIDI controller designed for percussionists, or for that matter, anyone else who may be inclined to generate a musical expression by pounding it out. This slim, silver-gray rectangle has eight plastic drum surfaces (hence its name), ten control buttons, and a ton of possibilities. It is not a drum, not in any traditional sense, because it doesn't make any sound of its own when struck. Instead, it sends out MIDI data. What happens after that depends entirely on the synth, drum machine, sequencer, computer, signal processor or other MIDI device the Octapad is connected to. Hook it to a drum machine and you'll drum with drum sounds. Hook it to a good sampling keyboard (like Roland's soon-to-be-released new S-50) and you could drum a string quartet complete with legato and staccato bowing, drones, vibratos, tremolos, the lot! The trick to harnessing the power of this new music technology is first knowing how the Octapad works, and then gaining an understanding of how you may need to change your thinking and drumming to take best advantage of it.

For each of the eight pads on the Octapad there are six possible settings: MIDI channel, MIDI Note Number, Sensitivity, Curve, Minimum MIDI Velocity Number, and Gate Time. All six can be adjusted individually (so each pad has a different "feel" and produces a different end result) or collectively (so all the pads work in the same way). Furthermore, once you have the pads set up the way you want, your particular arrangement can be stored as a preset. The Octapad has room for four such presets, which are called up by pressing the A, B, C or D buttons on the unit's front panel. Let's take a closer look at these six settings one at a time to get a better idea of what they can mean for a drummer.

Choosing a pad's MIDI Channel is a lot like addressing a letter. It's the way you make sure the beats you play on a particular pad get sent only to the particular instrument (or instruments) that you've set to receive them. Sometimes you'll want to dedicate the entire Octapad to a single MIDI channel. With sixteen channels available, at other times you'll want to divvy the pad assignments up,



A Percussionist's Point of View

Philip Shipley is a Roland user and percussionist for the Columbus Ohio Symphony Orchestra. The PAD-8 plays a major role as part of his arsenal of percussion instruments. Besides the Octapad's versatility as a controller of almost any imaginable MIDI-controllable sound, Shipley has found the unit to be a life-saver on occasions where there was just not enough room to accomodate all the percussion instruments required by a piece of orchestral music. "I call it my sound palette," says Shipley with obvious enthusiasm. "It can be anything I want it to be–and it hardly takes up any space!" He believes the PAD-8 is an ideal alternative to cumbersome and expensive percussion set-ups in numerous situations, especially the school setting.

"Some wonderful pieces of music can be impossible to play because the percussion called for is prohibitive. The Octapad would be perfect for exposing college students to something like Stockhausen's "Zycklus," which calls for multiple percussion set-ups."

Shipley sees other applications for the unit on the high school level in a school's band program. "Many bands are now using electronic instruments and P. A. systems for better clarity with those segments of the marching band that play from the sidelines," he explains. "You have less wear and tear, plus it's cost efficient. Tell me where you can buy a quality drum set for the price of an Octapad and TR-505? The PAD-8 really makes a lot more sense than carting bus loads of percussion instruments to a game or rally, and the sound quality is superior. Isn't that what's important?"

Whether as part of a symphony orchestra, a percussion ensemble, a marching or jazz band program, or an electronic music lab, the Octapad is the ideal MIDI controller for percussionists for whom compactness and versatility are essential.

giving you independent control of more than one MIDI instrument at a time. It's your choice. If you are playing only one device or recording into a sequencer, all the pads should share the same MIDI channel. But if you have a network of MIDI instruments on hand, why not take advantage each one's capabilities? Pick your sounds, match up MIDI channels between the individual pads and instruments, and swing. It can be lots of fun experimenting with different pad combinations–four and four, three and five, seven and one, four sets of two, or eight independent. With the Octapad you can seriously begin to orchestrate your playing. Even the straightest 4/4 gets more interesting if you vary the pad playing the downbeat, so it keeps changing timbre on consecutive measures.

The setting for a pad's MIDI Note Number tells the receiving MIDI instrument what pitch to play when triggered. This is old hat for keyboardists, but drummers (used to thinking in time more than in chords or melodies) might find it difficult. If you like—just dive in and play around a while until you feel at home. The rhythm in music grabs people's feet and initial interest, but it is chordal and melodic motion that inspires the heart and fills the head with new ideas. Using the Note Number setting to choose different pitches for each pad (just as you used MIDI Channel to set different timbres) means you can play chords and melodies right along with everybody else in the band. Before MIDI, this was only possible for percussionists with xylophones, marimbas, glockenspiels, and similar scale-based instruments. But these are unwieldy, limited in timbre, and (sigh) always sound like something is being hit. (Marimbas do not come with legato attacks.) The Octapad provides a range of just over eight octaves, represented by numbers from 0 (C1, in piano notation) to 99 (D#7). Altering the Note Number setting up or down by one shifts pitch exactly one half-step.

The Sensitivity setting on the Octapad is a value from 1 to 16 which determines how "responsive" the pad will be. This is what you use to adjust the Octapad to your playing style, be it delicate or bombastic. The normal setting is 8. Raise it and the pad becomes more sensitive, meaning it takes less hit to trigger. Lower the setting and the pad becomes less sensitive. Most drummers won't want to work outside the 5 to 11 range, due to loss of fine control. Below 5 it becomes difficult to get full volume out of even powerful hits, and above 11 it's too easy to hit full volume without meaning to. There is, however, a little more to volume control than Sensitivity: There's Curve to consider.

Curve sets the "shape" of a pad's response. Possible settings are from 1 to 5, and the default is 3, the number in the middle. When a pad is set to 3, it has what is called a linear response, that is, it reacts on a straight one-to-one basis. Hit it hard enough to trigger a MIDI Velocity number of 25, then hit it again exactly twice as hard, and the result will be a MIDI Velocity of 50. That makes easy, intuitive sense, but the other Curve settings work quite a bit differently. Setting number 1 is an exponential curve: At first it responds very little to increases in how hard you hit, then more and more and more, until finally the curve shoots straight up. At the top of this Curve setting, small differences in strike force get you big differences in volume. The 5 setting is just the opposite. It's a logarithmic curve in which volume climbs rapidly at first and then slows as it comes closer and closer to the possible maximum. Curve setting 5 is a good curve for drumming with your hands because it makes the Octapad responsive to a lighter–and therefore less painful–touch. If you're a madman who routinely breaks sticks, drumheads, and cymbals, check out Curve setting 1. (For the record, settings 2 and 4 are Curves halfway between the two extremes just described and the linear response of Curve 3.)

The remaining velocity-related setting on the Octapad is Minimum MIDI Velocity. It is used for what its name implies: To set the lowest volume a pad will produce. The range is from 0 to 64; in more concrete terms, from no note at all to exactly half volume on a MIDI synth or drum machine that is velocity-sensitive.

Gate Time is the last of the settings you can program into a pad, and definitely the least drum-like. When you hit a drum the sound decays on its own. But with MIDI, once a note is triggered it has to be deliberately turned off, or else it will drone on forever. Gate Time sets the length of the duration between a MIDI Note-On message sent by the Octapad and its necessary Note-Off followup. This enables you to take better advantage of synthesized sounds that have legato attacks, to custom-design notelengths for special musical effects, and generally to attain a fluid run of notes nothing at all like standard drumming. The Gate Time range is from 1 to 60. At 1 your notes will be extremely short and staccato (so short that synth sounds with slow attacks might never have a chance to be heard before they are cut off). At a setting of 30 notes will last just over a second, and at 60 they'll last a bit past two seconds.

With sixteen MIDI channels and only eight pads to an Octapad, Roland designed the system to be capable of expansion in either of two ways. One approach is to take two Octapads, connect the MIDI Out from one to the MIDI In of the other, and then plug the second one's MIDI Out into your MIDI system. The Octapad's MIDI In actually acts like a combination of a MIDI Inand a MIDI Thru, so the data from both controllers will be passed on. Two Octapads make for a convenient set-up because they give you a pad for each MIDI channel. (You can even hook standard MIDI keyboards or controllers up to your Octapad for the same pass-along effect, if useful.)

The second approach permits you to add up to six external Roland MIDI Drum Pads (PD-10s or PD-20s) to a single Octapad, through individual plugs on the rear panel, giving you access to fourteen playing surfaces and settings. (Note that it's not possible to store any settings for these external pads with your Octapad presets.) And if that's not enough, try connecting two Octapads as above and then hook six external MIDI drum pads to each of them for twenty-eight playing surfaces to send down sixteen MIDI channels!

All of this power is for nothing if you don't take advantage of it. Octapads aren't acoustic drums (though they can be made to sound like them). They aren't even electronic drums (though they can sound like them, too). They're MIDI pad controllers, and there's a whole new approach to playing that can be invented with them. Take advantage of that. Use them as inputs to sequencers. Lay your sounds out in spatial arrangements that are different from those of the standard drum kit, so you don't just play in all the old, habitual patterns. Program in chords and scales. Listen to how woodwind and brass and string instruments are played, and why, and adapt what you can learn to your playing. Challenge yourself. That, after all, is what being a musician is all about. Instruments like the Octapad make the future possible, but it will be musicians like you who make it real.

STRUCTURED/ADAPTIVE SYNTHESIS: A New Music Technology

Sound is the building block of all music, from the simplest single-line melody to the most complex, multi-timbrel, poly-rhythmic composition. It is the raw material that musicians use to communicate feelings to a listener. History has shown that man is endlessly inventive in discovering new means to generate sounds: From the most rudimentary percussion devices consisting of sticks and gourds, to the development of complicated interactions of various materials–wood, metal, even the by-products of animals. Today, the development of synthetic, man-made materials along with new electronic technologies has once again sparked the musician's urge to seek out these new means to generate sound, and rightly so if musical expression is to evolve.

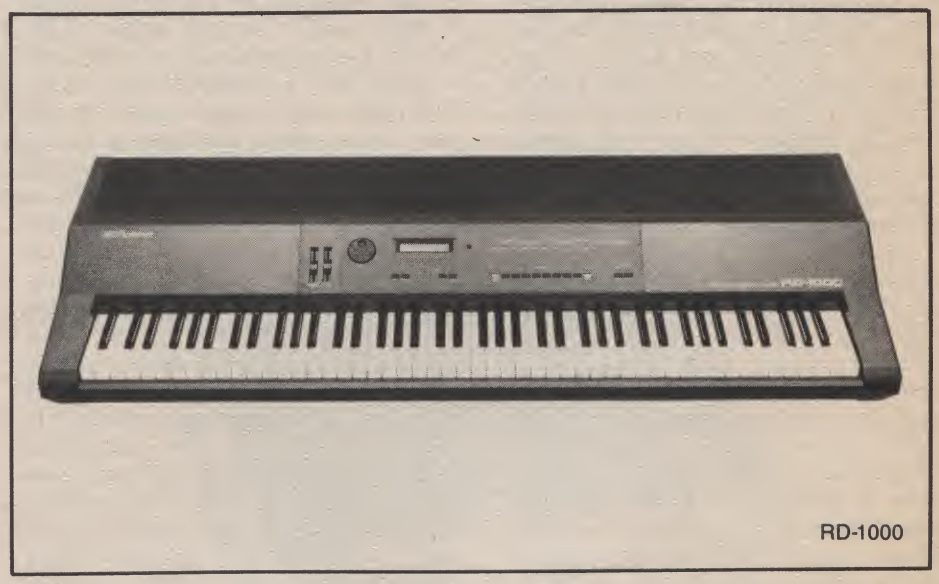
The past is full of examples that show how a newly developed instrument or sound technology can make possible a level of musical creativity that transcends what had gone before. It's important to acknowledge that this continual process does not diminish the power–or even importance–of earlier musical expressions utilizing materials and sound-producing instruments characteristic of these former periods. As mankind evolves, as technology evolves, so do our means of expression.

In 1986, musicians–in addition to everyone else in our society–find themselves living in an age of high technology. This century has seen more changes at a faster pace in a shorter span of time that any other that has preceded it–and the end is not yet in sight. Think of the rich diversity of technologies for producing sounds that's currently available to us. Besides the myriad of acoustic instruments that continues to provide an essential foundation for all musical thinking, the mid-twentieth century has bequeathed to us a host of electric sound producing/processing devices–guitars, tape recorders, amplifiers, microphones–that show no sign of losing their usefulness to all musicians. The development of inexpensive integrated circuits ushered in the era of more affordable electronic sound-producing devices which, in the short time they have been available, have made quite a history for themselves as part of the evolution of musical expression. And today, advancements in computer technology hold the promise of even more exciting sound generating capabilities. From a creative standpoint, the present is a truly exciting time to be a musican.

Roland has been among the foremost of electronics manufacturers to recognize the need to continually refine musical instrument technology, responding to the growth in sophistication of today's musicians. Ongoing research and development is a crucial process in the creation of electronic instruments that deliver into your hands the best implementations of the latest technological breakthroughs. It is Roland's commitment to this process which has made possible the recent introduction of a set of new, unbelievably realistic-sounding Digital Pianos, which rely on something called Structured/Adaptive Synthesis (S/A Synthesis) to perform their magic.

What is S/A Synthesis? Roland's new Structured/Adaptive Synthesis technology is a proprietary method of digital sound resynthesis developed specifically for the emulation of percussive, acoustic sounds. The result of years of extensive research efforts by Roland engineers, S/A Synthesis enables the creation of electronic instruments that faithfully reproduce all the richness, warmth, and expressiveness associated with acoustic piano sounds, as well as other acoustic keyboard instruments including harpsichord, clavinet, vibraphone, and electric piano.

If you really want to understand the power of S/A Synthesis as a breakthrough in sound technology, you've got to use your ears: We urge you to go into your local music store and spend some time listening to the high-quality timbres produced by the new RD-1000 Digital Piano, the MKS-20 rack-mounted Digital Piano Module, or the beautifully styled HP-5500 or HP-5600 Digital Pianos. Believe it or not, S/A Synthesis technology is responsible for the beautiful sounds you'll hear emanating from each of these instruments–not sampling. Let's distinguish the two by taking a closer look at what went into the creation of this new proprietary technology.



RD-1000

The first step by Roland engineers entailed a painstaking computer-assisted analysis and restructuring of the unique sounds produced by each individual key on several different acoustic keyboard instruments over their entire dynamic range. As you might imagine, this was a very time consuming process, but well worth the effort considering the exceptionally high sound quality this research has made possible. Next, after breaking down these sounds to their essential components, an advanced digital algorithm of their complex harmonic

variations was created, charting dynamic changes by velocity and loudness, as well as the attack and decay characteristics of each across the entire keyboard. This code is what enables the distinctive quality of each key to be fully re-created using the advanced VLSI (Very Large Scale Integration) hardware and software technology that is incorporated into each Digital Piano unit. As a result of this approach, Roland's Structured/Adaptive Synthesis overcomes all the limitations found in previous technologies, such as PCM (Pulse Code Modulation) digital sampling, for the electronic re-creation of acoustic-type keyboard sounds.

When you play Roland's Digital Pianos, you not only hear the effects of this technology, you can also feel it through the balanced action keyboard. The complex harmonics that differentiate each note according to the key played, plus the variations in dynamics that are determined by how hard or soft you strike a key–all the musical expressiveness we love in an acoustic instrument is captured with Structured/Adaptive Synthesis. In addition, let's look at some of the extra features you won't find on an acoustic keyboard.

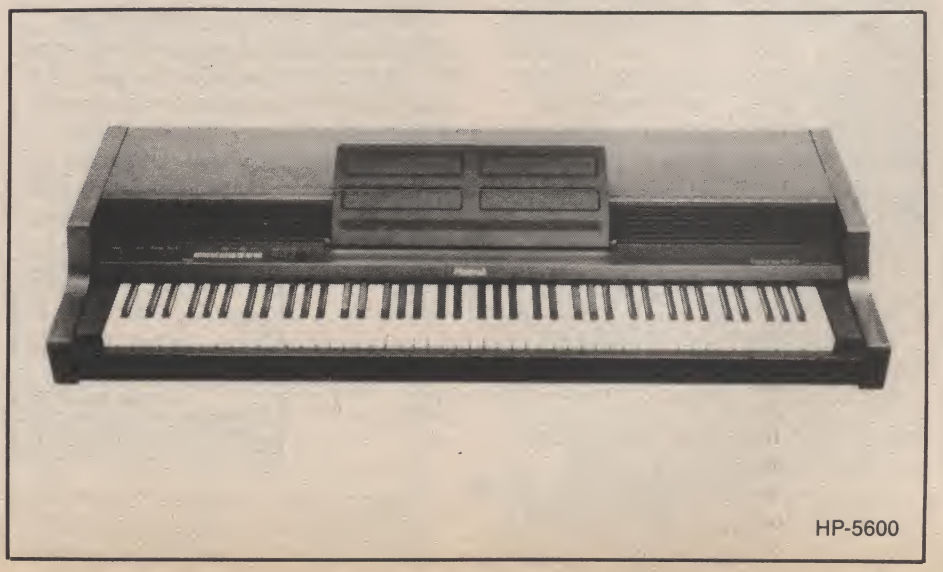
First and foremost, there's MIDI. (Need we say more?) Sure, it might be possible to rig up an acoustic piano somehow so it can produce MIDI note-on/off information–but it won't be quite as easy for it to play back a composition via MIDI with full dynamics like Roland's Digital Pianos can. And you know how problematic tuning an acoustic piano can be. On these Digital Pianos the concert pitch is easily set between 438Hz and 446Hz using the Tune control. In addition, you control output level, plus there's equalization as well as chorus and tremolo (rate and depth). On the MKS-20 rack-mounted unit you can store up to fifty-six combinations of these settings. (With an optionl memory cartridge, an addition sixty-four such setting combinations are at your fingertips.)

A feature story in the last issue of the *Roland Users Group* magazine introduced readers to film and television composer William Goldstein. Upon hearing Roland's new Digital Pianos for the first time, Goldstein was immediately convinced he had to own one. Now he's using the MKS-20 in a classical score for a three-hour television movie on NBC dramatizing the story of the Statue of Liberty.

"The work that was done by Roland engineers in developing the MKS-20 must have been so detailed," remarks Goldstein. "Even when you sample a piano sound there is an unevenness of timbre up and down the keyboard. Not so with a Roland Digital Piano. It really shines in the upper and lower registers. From now on, whenever I want an acoustic piano sound in a composition with other electronic instruments, I'll be using the MKS-20. It really saves me an enormous amount of time in recording. Recording an acoustic piano is a very difficult thing to do, to get it right. The equalization capabilities of the MKS-20 allow me to customize the piano sound to blend in with any situation or mix. You don't even have to bother EQing it on the mixing board!"

Check out the new RD-1000, MKS-20, and HP-5500/5600 Digital Pianos in your search for instruments that exceed the standard in high-quality sound and advanced capabilities. By making possible the creation of electronic keyboards that capture the full dynamic sensitivity and complete expressiveness of your playing, Structured/Adaptive Synthesis demonstrates Roland's ongoing commitment to providing the latest in state-of-the-art music technology for musicans who demand the best.

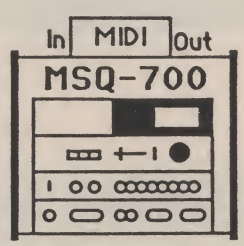
MKS-20


HP-5600

This issue's Service column is devoted to questions of a technical or operational nature that we have received from users about Roland products. The answers have been compiled by Roland service personnel and product specialists. If you have questions regarding any Roland products that you would like clarified, please send them in writing to the Roland Users Group magazine, 7200 Dominion Circle, Los Angeles, CA 90040.

Q: How do I "unmerge" tracks that I have merged together on the MSQ-700 sequencer?

A: Start by connecting a MIDI cable from the MIDI In jack to MIDI Out jack on the MSQ-700, creating a loop. Make sure that the Mix switch on the back of the unit is in the OFF position. First press the Multitrack button, then press the track button that corresponds to the track you wish to "un-merge." Next press the selector button to the left of the Display window until the Status indicator is illuminated. Now, select the MIDI channel data to extract by pressing the MIDI Channel Set button (in the lower left corner on the MSQ-700), and using the Back and Forward buttons to step through the channels until the one you wish to extract appears in the Display window. Finally, press the Overdub button to select an empty track on which to transfer the MIDI channel data you're extracting, then press the Load button. Only the MIDI channel you select will be transferred to the empty track; the merged track you extracted it from will remain unaffected. By selecting different MIDI channels from a merged track and transferring them individually to open tracks, you can reconstruct all your original MIDI channel data before you merged it together onto a single track.



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Q: Sometimes random colored spots appear on my Roland color monitor. What causes this?

A: The appearance of random colored spots on any monitor may be caused by having the unit too close to a magnetic source such as a motor, transformer, stereo speaker, and so forth. Often this problem will disappear upon relocation of the monitor beyond the range of the magnetic interference. Persistent discoloration of this sort would require degaussing (demagnetization), which should only be performed by an authorized service center.

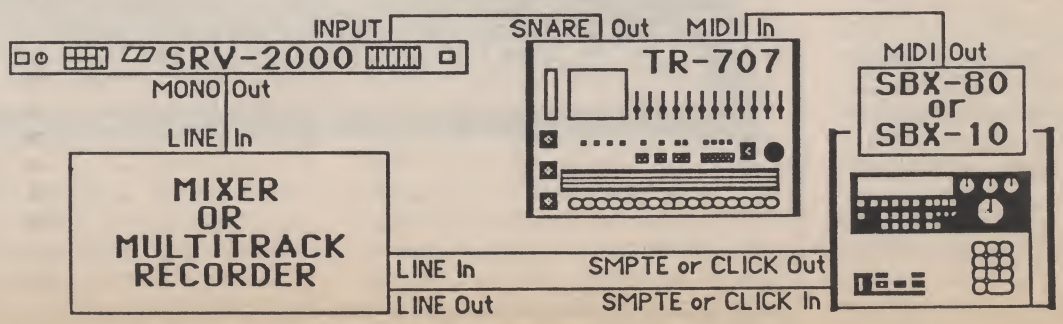
Q: Is it possible to synchronize playback of the new BOSS Micro Studio Series RSD-10 Sampler/Delay unit or BOSS DSD-2 Digital Sampler/Delay pedal with other units?

A: Yes, playback of sampled sounds recorded into the RSD-10 or DSD-2 can be synchronized to a drum machine, such as the Roland TR-707, TR-727, TR-808, TR-606, or DR-110. To do this, connect the Trigger Out of the drum machine to the Trigger In of the RSD-10 or DSD-2 for complete rhythmic control over playback of sampled sounds.

Q: I don't like flipping my multitrack tapes over and over again when recording to get that backwards reverb effect I like on the TR-707 snare sound, but I've found a shortcoming with the "inverse" setting on most digital reverbs: The backwards reverb effect always comes after the dry sound, which is the opposite of the traditional backwards reverb effect. Is it possible to get a "true" backwards reverb with Roland's SRV-2000 Digital Reverb?

A: It's impossible for any electronic effects device to guess what sound is going to happen before it happens. What you would need is a way to tell the reverb unit what sound to expect. There is a solution, but it's only possible using a multitrack tape recorder and the SBX-80 or SBX-10 Sync Box.

First record SMPTE code (from the SBX-80, and offset it by ten seconds) or a click signal (from the SBX-10, with enough intro for a count-in) on one track of the multitrack tape. Next, sync the TR-707 to the SBX and record the dry snare sound on one track first. Then, we'll record the reverse reverb effect on a new track: To do this, send the TR-707's snare output directly to the input of the SRV-2000. Call up the SRV-2000's inverse reverb setting. If you're using the SBX-80, offset the SMPTE code so the TR-707 will start 40 to 79 bits earlier than the previous offset used. If you're using the SBX-10, start it one click earlier than you started the recording of the dry snare sound (i.e. the fourth beat of the count-off). The result is a true reverse reverb effect, with the dry snare sound coming at the end of the reverb. (This is otherwise known among professionals as "preverb.")

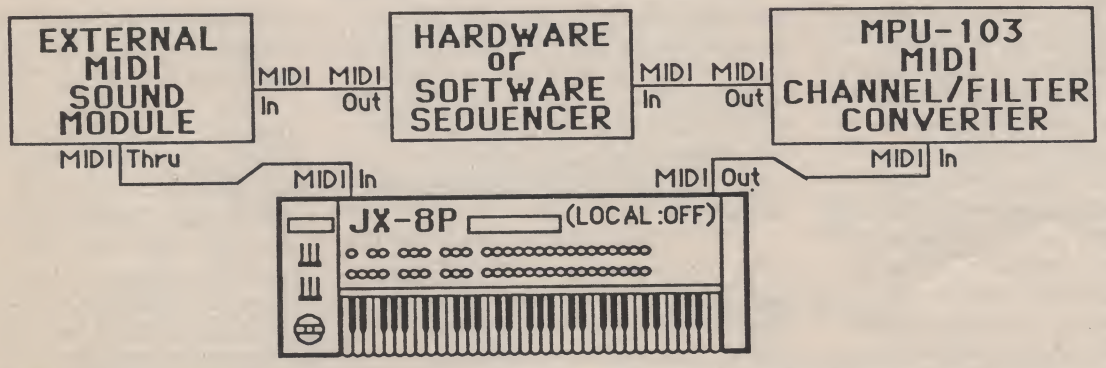


Q: I've heard it's possible to send and receive on different MIDI channels simultaneously with the JX-8P. Can you tell me more about this?

A: With advanced synthesizers like the JX-8P, it is possible to send and receive MIDI data on different channels simultaneously. This enables you to use the JX-8P as a "master" keyboard, controlling other synth modules, and at the same time it can act as a discrete sound source, with its playback controlled by a hardware-or software-based sequencer. Follow the accompanying diagram (which includes the use of the MPU-103 MIDI Channel Filter/Converter) to configure your system correctly for this.

To set the JX-8P so it will send MIDI data on one channel while receiving other MIDI data on another channel, you have to set a MIDI control called "Local On/Off" to Off. To do this, first press the MIDI Edit button on the JX-8P, then preset button number 2, followed by preset button number 4. Now adjust the Edit slider until "Off" is indicated in the unit's Display window. (This, in effect, "disconnects" the JX-8P's keyboard from its internal sound generating source.) Finally, on the MPU-103, set the channel setting to that of the external sound module you wish to control. (The MPU-103 enables you to change the channel setting of outgoing MIDI data only.) The JX-8P keyboard will now control any external sound module when you select the channel setting that corresponds to that module on the MPU-103.

Simultaneously, the JX-8P's internal sound source can be controlled by an external sequencer (or other controller) if it is configured to send MIDI data on the JX-8P's current channel setting (which is now independent of the channel its keyboard is sending MIDI data on). To play the JX-8P's internal sound source from the unit's own keyboard, merely set the MPU-103 to the same channel setting as the JX-8P, or reset the "Local On /Off" command to On (the default setting when you turn the unit on).



Q: I'm familiar with the different mode functions in MIDI, but I'm a little confused about Omni mode. Is it true that certain instruments transmit MIDI information in the Omni mode?

A: On MIDI instruments such as keyboard synthesizers, sound modules, drum machines, and so forth, Omni mode governs incoming MIDI data, not its transmittal. An instrument set to Omni mode will respond to incoming MIDI information on any or all MIDI channels simultaneously. Remember that MIDI information can be transmitted from instruments on only one MIDI channel at a time.

On another point relating to the transmission of MIDI data, some confusion may arise in understanding how the MIDI Thru jack on an instrument works. Basically, any MIDI data entering the MIDI In jack on an instrument will be passed unchanged to its MIDI Thru jack. From there it can be transmitted to the MIDI In jack on another device using a standard MIDI cable.

While we're at it, let's clarify how the MIDI Out jack on a sequencer, such as the MSQ-100 or MSQ-700, works: Their MIDI Outs send all MIDI data on all MIDI channels simultaneously. A switch on the back of each unit enables you to set the MIX OUT function which selects the MIDI data transmitted through the unit's MIDI Out jack. When the MIX OUT switch is set to Off, only MIDI data from the sequencer itself is passed to the MIDI Out jack. When the MIX OUT switch is set to On, all sequencer data plus any other incoming MIDI data is combined and sent through to the unit's MIDI Out jack.

Q: Is it possible to use the same MPU-401 MIDI Processing Unit with an Apple computer as well as with an IBM PC?

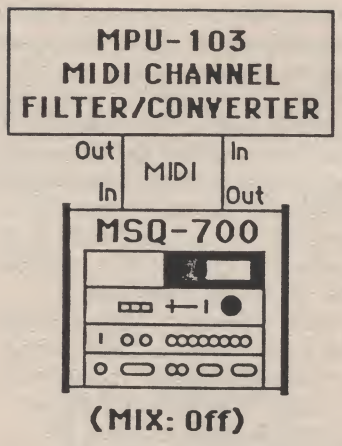
A: Yes, the same MPU-401 can be used with either computer, however, each computer requires an interface card made specifically for it. You cannot use the Apple interface card with an IBM computer, and vice versa. There are MPU-401 interface cards currently available for the IBM PC (also compatible on machines with IBM PC-type expansion slots), Apple (including IIe and II Plus), and Commodore 64 (including the SX-64).

Q: I have an SDE-1000 Digital Delay and I've been trying to control the delay effect using the Delay Time knob (X1 to X1.5) on the back of the unit. This seems to work sometimes, but other times it doesn't. What's going on?

A: The Delay Time knob on the back of the SDE-1000 enables you to increase the delay time indicated on the front panel up to 50 per cent (X1.5). The normal setting is X1. To use this Delay Time knob, the Modulation switch on the front panel must be disengaged because these two functions share some of the same internal circuitry and cannot be used at the same time.

Q: Many of the sequences I've recorded on the MSQ-700 contain MIDI patch change data for specific instruments, but sometimes I want to use these sequences with a different set of MIDI instruments. How can I remove this recorded patch change data so I can play back the sequence using different instruments?

A: To do this, you need to use the MPU-103 MIDI Channel Filer/Converter. First configure the MSQ-700 and MPU-103 as shown in the diagram. On the MPU-103, select the channel on which the MIDI data is recorded, then press the Key Event Only button. On the MSQ-700, select the track containing the patch change data that you wish to remove. Press the Overdub button and choose an empty track on which to send the new MIDI track data with the patch changes removed. Finally, press the Load button on the MSQ-700 to start the process of transferring the selected track with patch changes removed onto the empty track. This new track contains all the MIDI data from the originally sequenced track (minus patch change data). You can now re-record new patch change data for it on a separate track, merging the two together to free up track space.



Q: My BOSS DR-110 Doctor Rhythm Graphic plays only to measure fifteen, even though I've programmed in a sixty measure song. Is the unit broken?

A: Your DR-110 is not broken. You must remember to program the DR-110 to end on a particular measure each time you input a new song. Your song is probably ending on the last measure of the song previously programmed into it. To reprogram the end measure on the DR-110, push the D.C. (Da capo) button after you choose your last measure and before you enter it with the Enter button. (This is outlined on pages 26-27 of the owner's manual.)

Q: What are the differences between the SBX-80 and SBX-10 Sync Boxes?

A: The SBX-80 is designed to be used as a master controller. It can generate and read SMPTE time code, and output MIDI and time base signals. The SBX-80 can also send Song Position information via MIDI. The SBX-10 does not have SMPTE time code implementation. It is designed to be used as a click reading device or as a clock converter. The SBX-10 can read an incoming click, time base, or MIDI signal and covert it to MIDI, Sync 24, or two simultaneous time base outputs.

Q: I'm controlling my TR-707 from the PAD-8. How do I switch to triggering the TR-727 and then to a combination so I can play both drum machines simultaneously?

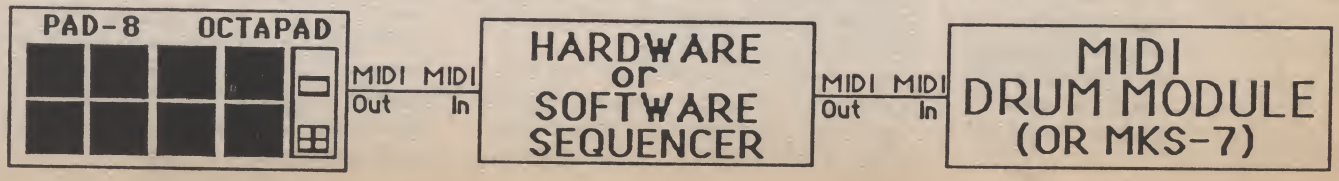
A: Each pad on the Octapad can have its own MIDI channel and note assignment. Because the unit is equipped with four memory locations, you can write these assignment combinations into memory banks A, B, C, or D.

Q: Why doesn't my MKS-30 Planet S respond to bender and program change information?

A: It can. While holding down the MIDI Channel button, individually press each program selector button, 3 through 6. As you do this, check the unit's LED display to make sure all indicators are in the "up" position. (Setting these indicators on the MKS-30 to the "up" position assures that no MIDI data is being filtered out. If set to the "down" position, MIDI data for program change, modulation wheel, hold pedal, and pitch bend will be filtered out.) Instruments such as the MKS-80, JX-8P, JX-3P, Juno-106, and MD-8 (and MKS-30) can be programmed to globally respond or ignore specific MIDI functions (except note-on note-off commands). Bender, program change, hold pedal, and modulation can all be turned on or off on these devices. Always consult the MIDI Implementation Chart that comes with each instrument to determine whether the unit you're using as a "master" can send specific MIDI information, and whether the "slave" unit can receive that information. Then check your owner's manual to see if your instrument is capable of filtering out specific MIDI information.

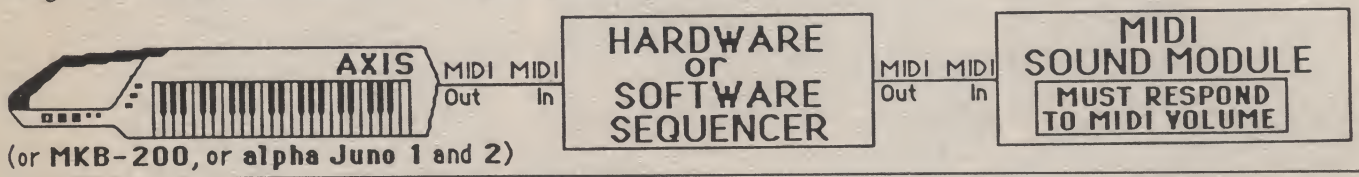
Q: How can I achieve a more realistic quality to the drum parts I sequence?

A: Drum parts will sound more realistic when sequenced using the PAD-8 Octapad. Connect the MIDI Out jack on the PAD-8 to the MIDI In jack on the sequencer, and connect the MIDI Out jack on the sequencer to the MIDI In jack on your drum machine. This will enable you to achieve a more "human" feel to drum parts by playing them with drumsticks on the Octapad. Because the unit is touch-sensitive, all nuances of a player's style, as well as unique rhythmic patterns, can be recorded and played back exactly using the MIDI sequencer.



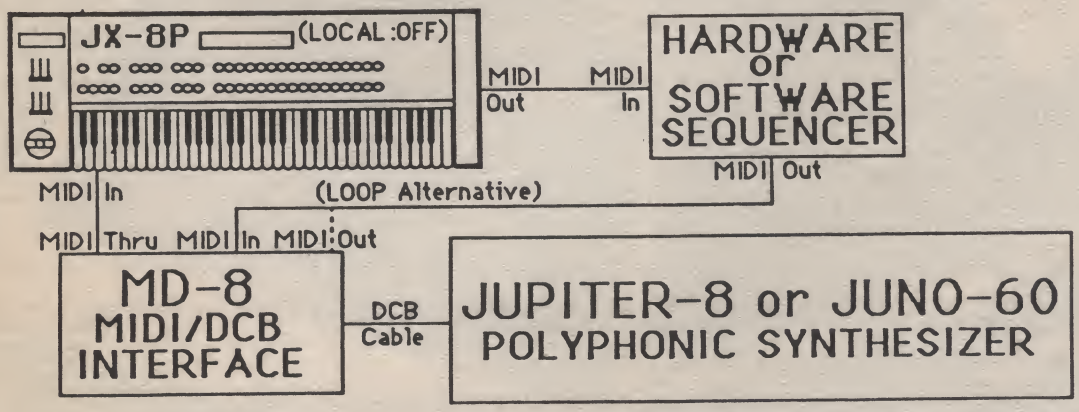
Q: Is there a way to use MIDI to control the playback volume of individual MIDI instruments while they're being sequenced?

A: Yes, you can use either the new Roland MKB-200 or Axis MIDI keyboard controllers which are capable of sending MIDI volume control data while sequencing to control the levels of MIDI instruments which respond to MIDI volume control commands, such as the JX-8P, alpha Junos 1 and 2, MKS-80 Super Jupiter, and MKS-20 Digital Piano. These volume changes can be recorded as MIDI data while sequences are recorded, or this data can be recorded later on a separate track of the sequencer and later merged with others. Using these MIDI controllers in this way enables you to balance different parts of a sequenced arrangement, or perform crescendos and decrescendos within a sequence.



Q: I use a Jupiter-8 and Juno-60 with the MD-8 MIDI/DCB Interface. I find that these units will play back all the parts in a recorded sequence, even when the sequence contains data on more than one channel. Why is this?

A: When you first turn on the MD-8, it powers up in Omni mode, which means that it is set to read MIDI data sent on all channels simultaneously. To change this, you must reset the MD-8 to Poly mode, which will enable it to read MIDI data on single channels at a time that you select. This change can be accomplished automatically in your MIDI system by making sure to turn on the sequencer (or other controlling device) last. Such units will often send out a MIDI Status byte that resets all instruments in a MIDI system to Poly mode automatically (though there are some exceptions to this with certain units). If the MD-8 still responds in Omni mode after the above procedure, turn the MD-8 off. First connect the MD-8's MIDI Out jack to its MIDI In jack, creating a loop. Next, turn the unit on and play a few notes on the Jupiter-8 or Juno-60 (which is still connected). Then, without turning off the power, connect the MD-8 back into the MIDI system in the standard fashion. This procedure should reset the MD-8 to Poly mode, allowing you to selectively play back on individual MIDI channels.



Q: The batteries in my BOSS DD-2 Digital Delay pedal and DSD-2 Digital Sampler/Delay don't last very long. Why is that, is there something wrong?

A: These pedals use the latest digital technology to get the cleanest delay sound available in any compact pedal. With so much packed into these pedals, they have a real appetite for current. They draw approximately 60 milli-amps (ma) as opposed to what is normally used by most effects pedals (10 to 15ma). In the design of these pedals, Roland intended they be operated using the BOSS PSA-120 regulated DC power supply. The battery option was meant as a back-up in case the power cord was disconnected during use. Use the PSA-120 to get the best performance out of these pedals, and if you're in a pinch use the batteries, but expect only about two hours' use from a good alkaline battery.

Q: I'm using six of the pads on the PAD-8 to control my TR-707 and two to control the MKS-80 Super Jupiter. Can I expand the Octapad to also control six voices from the TR-727?

A: Yes. The PAD-8 has six additional inputs that allow you to use external pads in addition to the unit's eight on-board pads, giving you a total of fourteen control outputs possible.

Q: Is it possible to use a BOSS PSA-120 power supply with the TR-707 or TR-727 Rhythm Composers?

A: No. Besides the fact that the jacks do not physically fit together, they are also electrically incompatible. The PSA-120 puts out 9V DC, while the TR-707/727 puts out 12V DC. Always use the recommended power supply for the instrument in question.

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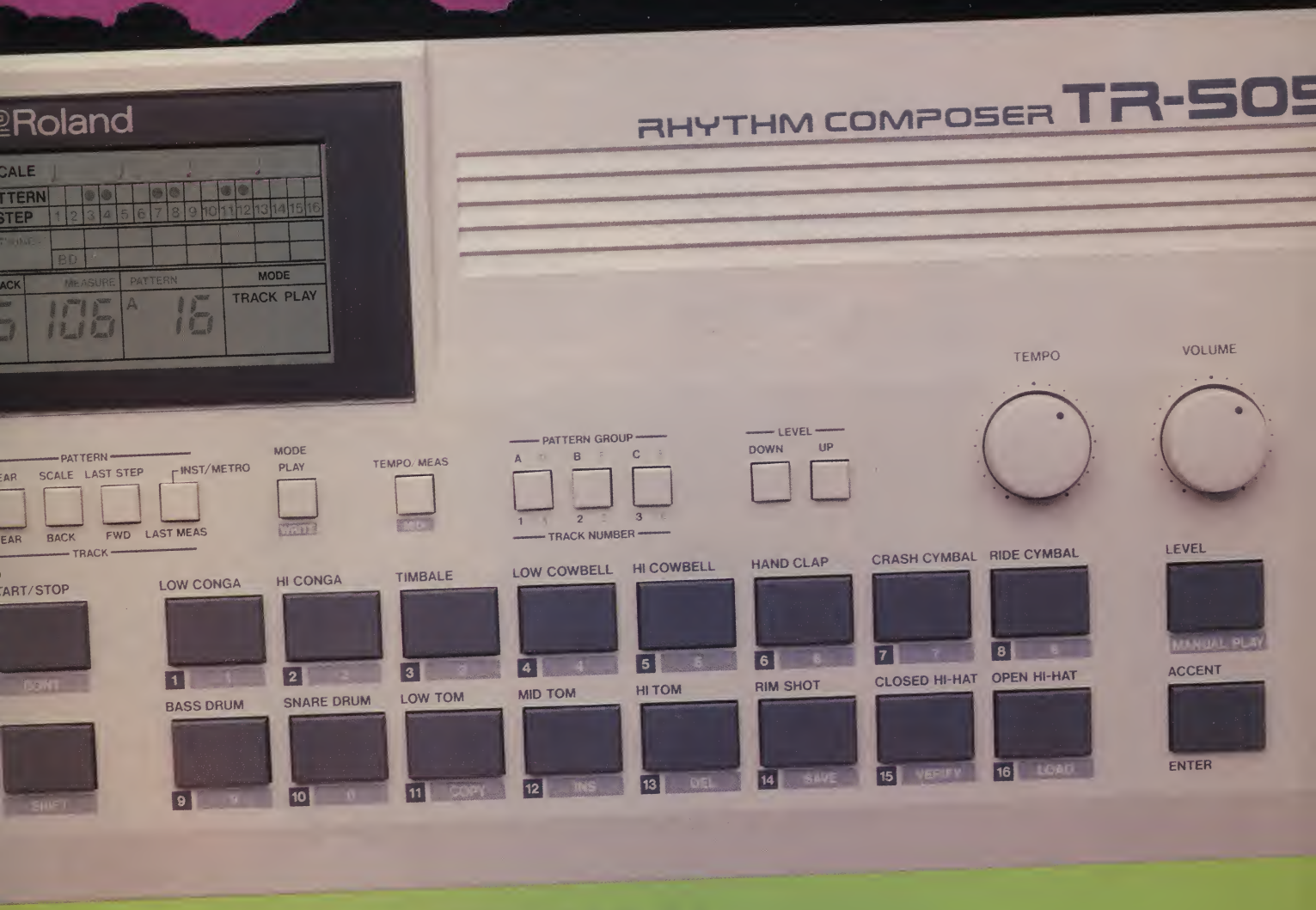
TR-505



LIGHT HEAVYWEIGHT

Weighing in at only 950 grams (that's 2 lbs. 2 oz. to us), Roland's spunky new TR-505 Rhythm Composer sports a winning combination of traditional drum-kit and Latin Percussion instruments. But don't let its small size and modest price fool you—the TR-505 boasts heavy-weight digital PCM samples of kick, snare, toms, handclaps, high hats, cymbals, timbales, congas and cowbells—16 voices in all to give your rhythm tracks, rehearsals or live performances a punchy professional drum sound and feel. Behind all this brawn is a sophisticated computer brain with more than enough smarts and memory to make this drum machine your ally in the fight against boring drum programming. Program 48 of your own drum patterns (in real-time or step-time) or take advantage of 48 useful preprogrammed patterns—either way you're off and drumming right away. The large LCD display helps you keep track of every beat and performance parameter. But that's not all, our new champ still has a few moves you haven't seen. The TR-505 is a thoroughly modern MIDI instrument loaded with MIDI features and controls including an ability to respond to dynamic drum parts. Battery or AC powered, the versatile TR-505 scores an easy Technical Knock-Out over the competition. But don't say we didn't warn you—this little powerhouse will knock your socks off!

Roland

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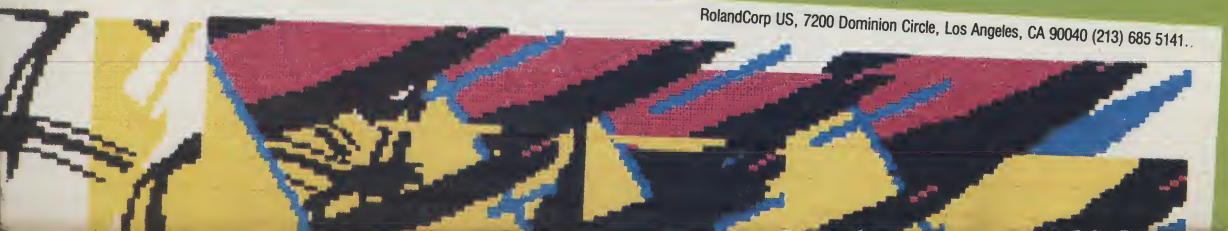

ALPHA JUNO 1 & 2

FLASH BOARDS

Flashy sounds, flashy features and a flash to operate, the new Alpha JUNO 1 and 2 are two hot keyboards that are sure to move any musician's set-up into the fast lane of performance. Both Alpha JUNOs offer powerful sound synthesis (14 waveform DCO, 8 parameter envelopes) but at the same time offer incredible advances in user-friendly programming and editing features. The key is the JUNO's Alpha Dial. Just whirl it to edit any of the 64 preset patches or to create 64 new program patches–sound programming has never been so easy. Add an M-64 C Memory Cartridge and you have 192 patches at just a touch. The Alpha JUNO's innovative Tone Modify Function lets you quickly modify the many related parameters of Brilliance, Envelope Time, Modulation Rate and Depth–all at the same time with just one touch of the Alpha Dial–a system called Biometrics. Or you can add the optional PG-300 Programmer to make programming even easier. You'll also find the Alpha JUNO's MIDI implementation to be the most sophisticated on the market. Most amazing is that all these features don't carry a flashy price. Which means they're going to move out fast, so you'd better do that too–only to your Roland dealer.

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This man plays drums..

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